

§11-265-443 Design and operating requirements. (a) Drip pads must:

- (1) Be constructed of non-earthen materials, excluding wood and non-structurally supported asphalt;
- (2) Be sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system;
- (3) Have a curb or berm around the perimeter;
- (4) (i) Have a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second, e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second such that the entire surface where drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system. This surface material must be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material must be chemically compatible with the preservatives that contact the drip pad. The requirements of this provision apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with subsection 11-265-442(b) instead of subsection 11-265-442(a).
- (ii) The owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified registered professional engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and recertified annually. The evaluation must document the extent to which the drip pad meets the design and operating standards of this section, except for subsection (b).
- (5) Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.

(b) If an owner/operator elects to comply with subsection 11-265-442(a) instead of subsection 11-265-442(b), the drip pad must have:

- (1) A synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the

active life (including the closure period) of the drip pad. The liner must be constructed of materials that will prevent waste from being absorbed into the liner and prevent releases into the adjacent subsurface soil or ground water or surface water during the active life of the facility. The liner must be:

- (i) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad);
 - (ii) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and
 - (iii) Installed to cover all surrounding earth that could come in contact with the waste or leakage; and
- (2) A leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad. The leakage detection system must be:
- (i) Constructed of materials that are:
 - (A) Chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and
 - (B) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad; and
 - (ii) Designed and operated to function without clogging through the scheduled closure of the drip pad.
 - (iii) Designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.
- (3) A leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad. The date, time, and quantity of any leakage collected in this system and removed must be documented in the operating log.
- (c) Drip pads must be maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could

cause hazardous waste to be released from the drip pad.

(d) The drip pad and associated collection system must be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.

(e) Unless protected by a structure, as described in subsection 11-265-440(b), the owner or operator must design, construct, operate and maintain a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a twenty-four hour, twenty-five year storm unless the system has sufficient excess capacity to contain any run-on that might enter the system, or the drip pad is protected by a structure or cover, as described in subsection 11-265-440(b).

(f) Unless protected by a structure or cover, as described in subsection 11-265-440(b), the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a twenty-four hour, twenty-five year storm.

(g) The drip pad must be evaluated to determine that it meets the requirements of subsections (a) through (f) and the owner or operator must obtain a statement from an independent, qualified registered professional engineer certifying that the drip pad design meets the requirements of this section.

(h) Drippage and accumulated precipitation must be removed from the associated collection system as necessary to prevent overflow onto the drip pad.

(i) The drip pad surface must be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator must document the date and time of each cleaning and the cleaning procedure used in the facility's operating log.

(j) Drip pads must be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.

(k) After being removed from the treatment vessel, treated wood from pressure and non-pressure processes must be held on the drip pad until drippage has ceased. The owner or operator must maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement.

(l) Collection and holding units associated with run-on and run-off control systems must be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

(m) Throughout the active life of the drip pad, if the

owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition must be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:

- (1) Upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage by the leak detection system), the owner or operator must:
 - (i) Enter a record of the discovery in the facility operating log;
 - (ii) Immediately remove the portion of the drip pad affected by the condition from service;
 - (iii) Determine what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the clean up and repairs;
 - (iv) Within twenty-four hours after discovery of the condition, notify the director of the condition and, within ten working days, provide a written notice to the director with a description of the steps that will be taken to repair the drip pad, and clean up any leakage, and the schedule for accomplishing this work.
- (2) The director will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.
- (3) Upon completing all repairs and clean up, the owner or operator must notify the director in writing and provide a certification, signed by an independent qualified, registered professional engineer, that the repairs and clean up have been completed according to the written plan submitted in accordance with paragraph (m)(1)(iv).

(n) The owner or operator must maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This must include identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices. [Eff 6/18/94; comp

] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35)
(Imp: 40 C.F.R. §265.443)

§11-265-444 Inspections. (a) During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign

materials). Immediately after construction or installation, liners must be inspected and certified as meeting the requirements of section 11-265-443 by an independent qualified, registered professional engineer. The certification must be maintained at the facility as part of the facility operating record. After installation, liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.

(b) While a drip pad is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

- (1) Deterioration, malfunctions or improper operation of run-on and run-off control systems;
- (2) The presence of leakage in and proper functioning of leak detection system;
- (3) Deterioration or cracking of the drip pad surface.
[Eff 6/18/94; comp] (Auth: HRS
§§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R.
§265.444)

§11-265-445 Closure. (a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in subsection (a), the owner or operator finds that not all contaminated subsoils can be practically removed or decontaminated, he must close the facility and perform post-closure care in accordance with closure and post-closure care requirements that apply to landfills (section 11-265-310). For permitted units, the requirement to have a permit continues throughout the post-closure period.

(c)(1) The owner or operator of an existing drip pad, as defined in section 11-265-440, that does not comply with the liner requirements of paragraph 11-265-443(b)(1) must:

- (i) Include in the closure plan for the drip pad under section 11-265-112 both a plan for complying with subsection (a) and a contingent plan for complying with subsection (b) in case not all contaminated subsoils can be practicably removed at closure; and
- (ii) Prepare a contingent post-closure plan under section 11-265-118 for complying with subsection (b) in case not all contaminated subsoils can be practicably removed at closure.

- (2) The cost estimates calculated under sections 11-265-112 and 11-265-144 for closure and post-closure care of a drip pad subject to this subsection must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under subsection (a). [Eff 6/18/94; comp]
(Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.445)

SUBCHAPTERS X-Z

[RESERVED]

SUBCHAPTER AA

AIR EMISSION STANDARDS FOR PROCESS VENTS

§11-265-1030 Applicability. (a) The rules in this subchapter apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in section 11-265-1).

(b) Except for subsections 11-265-1034(d) and 11-265-1034(e), this subchapter applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least ten ppmw, if these operations are conducted in one of the following:

- (1) A unit that is subject to the permitting requirements of chapter 11-270, or
- (2) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of section 11-262-34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of chapter 11-270, or
- (3) A unit that is exempt from permitting under the provisions of section 11-262-34(a) (i.e., a "90-day" tank or container) and is not a recycling unit under the requirements of section 11-261-6.

(c) The requirements of sections 11-265-1032 through 11-265-1036 apply to process vents on hazardous waste recycling units previously exempt under paragraph 11-261-6(c)(1). Other exemptions under section 11-261-4 and subsection 11-265-1(c) are not affected by these requirements.

(d) The requirements of this subchapter do not apply to the process vents at a facility where the facility owner or operator

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certifies that all of the process vents that would otherwise be subject to this subchapter are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable Federal Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. The documentation of compliance under regulations at 40 CFR part 60, part 61, or part 63 shall be kept with, or made readily available with, the facility operating record. [Eff 6/18/94; am 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1030)

§11-265-1031 Definitions. As used in this subchapter, all terms shall have the meaning given them in section 11-264-1031, HRS chapter 342J, and chapters 11-260 through 11-266. [Eff 6/18/94; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1031)

§11-265-1032 Standards: Process vents. (a) The owner or operator of a facility with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction or air or steam stripping operations managing hazardous wastes with organic concentrations at least 10 ppmw shall either:

- (1) Reduce total organic emissions from all affected process vents at the facility below 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr), or
- (2) Reduce, by use of a control device, total organic emissions from all affected process vents at the facility by ninety-five weight percent.

(b) If the owner or operator installs a closed-vent system and control device to comply with the provisions of subsection (a), the closed-vent system and control device must meet the requirements of section 11-265-1033.

(c) Determinations of vent emissions and emission reductions or total organic compound concentrations achieved by add-on control devices may be based on engineering calculations or performance tests. If performance tests are used to determine vent emissions, emission reductions, or total organic compound concentrations achieved by add-on control devices, the performance tests must conform with the requirements of subsection 11-265-1034(c).

(d) When an owner or operator and the director do not agree on determinations of vent emissions and/or emission reductions or total organic compound concentrations achieved by add-on control devices based on engineering calculations, the test methods in subsection 11-265-1034(c) shall be used to resolve the

disagreement. [Eff 6/18/94; comp] (Auth: HRS
 §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1032)

§11-265-1033 Standards: Closed-vent systems and control devices.

(a)(1) Owners or operators of closed-vent systems and control devices used to comply with provisions of this chapter shall comply with the provisions of this section.

(2) (i) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this subchapter on the effective date that the facility becomes subject to the provisions of this subchapter must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to thirty months after the effective date that the facility becomes subject to this subchapter for installation and startup.

(ii) Any unit that begins operation after December 21, 1990, and is subject to the requirements of this subchapter when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.

(iii) The owner or operator of any facility in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to this subchapter shall comply with all requirements of this subchapter as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this subchapter can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subchapter. The owner or operator shall enter the implementation schedule in the operating

record or in a permanent, readily available file located at the facility.

- (iv) Owners and operators of facilities and units that become newly subject to the requirements of this subchapter after December 8, 1997, due to an action other than those described in subparagraph (a)(2)(iii) must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this subchapter; the 30-month implementation schedule does not apply).

(b) A control device involving vapor recovery (e.g., a condenser or adsorber) shall be designed and operated to recover the organic vapors vented to it with an efficiency of ninety-five weight percent or greater unless the total organic emission limits of paragraph 11-265-1032(a)(1) for all affected process vents can be attained at an efficiency less than ninety-five weight percent.

(c) An enclosed combustion device (e.g., a vapor incinerator, boiler, or process heater) shall be designed and operated to reduce the organic emissions vented to it by ninety-five weight percent or greater; to achieve a total organic compound concentration of twenty ppmv, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to three percent oxygen; or to provide a minimum residence time of 0.50 seconds at a minimum temperature of seven-hundred and sixty degrees Celsius. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame combustion zone of the boiler or process heater.

- (d)(1) A flare shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (e)(1), except for periods not to exceed a total of five minutes during any two consecutive hours.
- (2) A flare shall be operated with a flame present at all times, as determined by the methods specified in subparagraph (f)(2)(iii).
- (3) A flare shall be used only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater, if the flare is steam-assisted or air-assisted; or if the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (e)(2).
- (4) (i) A steam-assisted or nonassisted flare shall be designed for and operated with an exit velocity, as determined by the methods specified in

- paragraph (e)(3), of less than 18.3 m/s (60 ft/s), except as provided in subparagraphs (d)(4)(ii) and (d)(4)(iii).
- (ii) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in paragraph (e)(3), equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s) is allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).
 - (iii) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in paragraph (e)(3), less than the velocity, V_{\max} , as determined by the method specified in paragraph (e)(4), and less than 122 m/s (400 ft/s) is allowed.
- (5) An air-assisted flare shall be designed and operated with an exit velocity less than the velocity, V_{\max} , as determined by the method specified in paragraph (e)(5).
 - (6) A flare used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.
- (e)(1) Reference Method 22 in 40 CFR Part 60 (1998) shall be used to determine the compliance of a flare with the visible emission provisions of this subchapter. The observation period is two hours and shall be used according to Method 22.
- (2) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \left[\sum_{i=1}^n C_i H_i \right]$$

where:

H_T =Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at twenty-five degrees Celsius and seven-hundred and sixty mm Hg, but the standard temperature for determining the volume corresponding to one mol is twenty degrees Celsius;

K =Constant, 1.74×10^{-7} (1/ppm) (g mol/scm) (MJ/kcal) where standard temperature for (g mol/scm) is twenty degrees Celsius;

C_i =Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference

Method 18 in 40 CFR Part 60 (1998) and measured for hydrogen and carbon monoxide by ASTM D 1946-82 (incorporated by reference as specified in section 11-260-11); and

H_i =Net heat of combustion of sample component i, kcal/g mol at twenty-five degrees Celsius and seven-hundred and sixty mm Hg. The heats of combustion may be determined using ASTM D 2382-83 (incorporated by reference as specified in section 11-260-11) if published values are not available or cannot be calculated.

- (3) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D in 40 CFR Part 60 (1998) as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.
- (4) The maximum allowed velocity in m/s, V_{max} , for a flare complying with subparagraph (d)(4)(iii) shall be determined by the following equation:

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8) / 31.7$$

where:

H_T =The net heating value as determined in paragraph (e)(2).

28.8=Constant,

31.7=Constant.

- (5) The maximum allowed velocity in m/s, V_{max} , for an air-assisted flare shall be determined by the following equation:

$$V_{max} = 8.706 + 0.7084 (H_T)$$

where:

8.706 = Constant.

0.7084 = Constant.

H_T = The net heating value as determined in paragraph (e)(2).

(f) The owner or operator shall monitor and inspect each control device required to comply with this section to ensure proper operation and maintenance of the control device by implementing the following requirements:

- (1) Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow from each affected process vent to the control device at least once every hour. The flow indicator sensor shall be installed in the vent stream at the nearest feasible point to the control device inlet, but before being combined with other vent streams.
- (2) Install, calibrate, maintain, and operate according to the manufacturer's specifications a device to continuously monitor control device operation as specified below:
 - (i) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ± 1 percent of the temperature being monitored in degrees Celsius or ± 0.5 degrees Celsius, whichever is greater. The temperature sensor shall be installed at a location in the combustion chamber downstream of the combustion zone.
 - (ii) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations and have an accuracy of ± 1 percent of the temperature being monitored in degrees Celsius or ± 0.5 degrees Celsius, whichever is greater. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.
 - (iii) For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.
 - (iv) For a boiler or process heater having a design heat input capacity less than forty-four MW, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ± 1 percent of the temperature being monitored in degrees Celsius or ± 0.5 degrees Celsius, whichever is greater. The temperature sensor shall be installed at a location in the furnace downstream of the combustion zone.
 - (v) For a boiler or process heater having a design heat input capacity greater than or equal to forty-four MW, a monitoring device equipped with a continuous recorder to measure a parameter(s) that indicates good combustion operating practices are being used.

- (vi) For a condenser, either:
 - (A) A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the condenser; or
 - (B) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ± 1 percent of the temperature being monitored in degrees Celsius or ± 0.5 degrees Celsius, whichever is greater. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser exit (i.e., product side).
- (vii) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly in the control device, either:
 - (A) A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the carbon bed, or
 - (B) A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.
- (3) Inspect the readings from each monitoring device required by paragraphs (f)(1) and (f)(2) at least once each operating day to check control device operation and, if necessary, immediately implement the corrective measures necessary to ensure the control device operates in compliance with the requirements of this section.
 - (g) An owner or operator using a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device, shall replace the existing carbon in the control device with fresh carbon at a regular, predetermined time interval that is no longer than the carbon service life established as a requirement of clause 11-265-1035(b)(4)(iii)(F).
 - (h) An owner or operator using a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon on a regular basis by using one of the following procedures:
 - (1) Monitor the concentration level of the organic compounds in the exhaust vent stream from the carbon adsorption system on a regular schedule and replace the existing carbon with fresh carbon immediately when

carbon breakthrough is indicated. The monitoring frequency shall be daily or at an interval no greater than twenty percent of the time required to consume the total carbon working capacity established as a requirement of clause 11-265-1035(b)(4)(iii)(G), whichever is longer.

- (2) Replace the existing carbon with fresh carbon at a regular, predetermined time interval that is less than the design carbon replacement interval established as a requirement of clause 11-265-1035(b)(4)(iii)(G).

(i) An owner or operator of an affected facility seeking to comply with the provisions of this chapter by using a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system is required to develop documentation including sufficient information to describe the control device operation and identify the process parameter or parameters that indicate proper operation and maintenance of the control device.

(j) A closed-vent system shall meet either of the following design requirements:

- (1) A closed-vent system shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background as determined by the procedure in section 11-265-1034(b), and by visual inspections; or
- (2) A closed-vent system shall be designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.

(k) The owner or operator shall monitor and inspect each closed-vent system required to comply with this section to ensure proper operation and maintenance of the closed-vent system by implementing the following requirements:

- (1) Each closed-vent system that is used to comply with paragraph (j)(1) shall be inspected and monitored in accordance with the following requirements:
 - (i) An initial leak detection monitoring of the closed-vent system shall be conducted by the owner or operator on or before the date that the system becomes subject to this section. The owner or operator shall monitor the closed-vent system components and connections using the procedures specified in section 11-265-1034(b) to demonstrate that the closed-vent system operates with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background.

- (ii) After initial leak detection monitoring required in subparagraph (k)(1)(i), the owner or operator shall inspect and monitor the closed-vent system as follows:
 - (A) Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air pollutant emissions. The owner or operator shall monitor a component or connection using the procedures specified in section 11-265-1034(b) to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).
 - (B) Closed-vent system components or connections other than those specified in clause (k)(1)(ii)(A) shall be monitored annually and at other times as requested by the director, except as provided for in subsection (n), using the procedures specified in section 11-265-1034(b) to demonstrate that the components or connections operate with no detectable emissions.
 - (iii) In the event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of paragraph (k)(3).
 - (iv) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in section 11-265-1035.
- (2) Each closed-vent system that is used to comply with paragraph (j)(2) shall be inspected and monitored in accordance with the following requirements:
 - (i) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping or loose connections.
 - (ii) The owner or operator shall perform an initial inspection of the closed-vent system on or before the date that the system becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year.

- (iii) In the event that a defect or leak is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k)(3).
- (iv) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in section 11-265-1035.
- (3) The owner or operator shall repair all detected defects as follows:
 - (i) Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than 500 ppmv above background, shall be controlled as soon as practicable, but not later than 15 calendar days after the emission is detected, except as provided for in subparagraph (k)(3)(iii).
 - (ii) A first attempt at repair shall be made no later than 5 calendar days after the emission is detected.
 - (iii) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.
 - (iv) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in section 11-265-1035.
- (1) Closed-vent systems and control devices used to comply with provisions of this subchapter shall be operated at all times when emissions may be vented to them.
- (m) The owner or operator using a carbon adsorption system to control air pollutant emissions shall document that all carbon that is a hazardous waste and that is removed from the control device is managed in one of the following manners, regardless of the average volatile organic concentration of the carbon:
 - (1) Regenerated or reactivated in a thermal treatment unit that meets one of the following:
 - (i) The owner or operator of the unit has been issued either a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 264, subpart X or a State hazardous waste permit under section 11-271-15 which implements the requirements of chapter 11-264, subchapter X; or
 - (ii) The unit is equipped with an operating air emission controls in accordance with the applicable requirements of subchapters AA and CC

- of either this chapter or of chapter 11-264; or
- (iii) The unit is equipped with an operating air emission controls in accordance with a national emission standard for hazardous air pollutants under 40 CFR part 61 or 40 CFR part 63.
- (2) Incinerated in a hazardous waste incinerator for which the owner or operator either:
 - (i) Has been issued either a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 264, subpart O or a State hazardous waste permit under section 11-271-15 which implements the requirements of chapter 11-264, subchapter O; or
 - (ii) Has designed and operates the incinerator in accordance with the interim status requirements of subchapter O.
- (3) Burned in a boiler or industrial furnace for which the owner or operator either:
 - (i) Has been issued either a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 266, subpart H or a State hazardous waste permit under section 11-271-15 which implements the requirements of chapter 11-264, subchapter H; or
 - (ii) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of chapter 11-266, subchapter H.
- (n) Any components of a closed-vent system that are designated, as described in section 11-265-1035(c)(9), as unsafe to monitor are exempt from the requirements of clause (k)(1)(ii)(B) if:
 - (1) The owner or operator of the closed-vent system determines that the components of the closed-vent system are unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with clause (k)(1)(ii)(B); and
 - (2) The owner or operator of the closed-vent system adheres to a written plan that requires monitoring the closed-vent system components using the procedure specified in clause (k)(1)(ii)(B) as frequently as practicable during safe-to-monitor times. [Eff 6/18/94; am 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1033)

§11-265-1034 Test methods and procedures. (a) Each owner or operator subject to the provisions of this subchapter shall comply with the test methods and procedures requirements provided in this section.

- (b) When a closed-vent system is tested for compliance with

no detectable emissions, as required in subsection 11-265-1033(k), the test shall comply with the following requirements:

- (1) Monitoring shall comply with Reference Method 21 in 40 CFR Part 60 (1998).
- (2) The detection instrument shall meet the performance criteria of Reference Method 21.
- (3) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.
- (4) Calibration gases shall be:
 - (i) Zero air (less than ten ppm of hydrocarbon in air).
 - (ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, ten-thousand ppm methane or n-hexane.
- (5) The background level shall be determined as set forth in Reference Method 21.
- (6) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.
- (7) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with five-hundred ppm for determining compliance.

(c) Performance tests to determine compliance with subsection 11-265-1032(a) and with the total organic compound concentration limit of subsection 11-265-1033(c) shall comply with the following:

- (1) Performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices shall be conducted and data reduced in accordance with the following reference methods and calculation procedures:
 - (i) Method 2 in 40 CFR Part 60 (1998) for velocity and volumetric flow rate.
 - (ii) Method 18 in 40 CFR Part 60 (1998) for organic content.
 - (iii) Each performance test shall consist of three separate runs; each run conducted for at least one hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs shall apply. The average shall be computed on a time-weighted basis.
 - (iv) Total organic mass flow rates shall be determined by the following equation:

$$[10^{-6}] E_h = Q_{sd} \left[\sum_{i=1}^n C_i MW_i \right] [0.0416]$$

where:

E_h =Total organic mass flow rate, kg/h;

Q_{sd} =Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;

n =Number of organic compounds in the vent gas;

C_i =Organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 18;

MW_i =Molecular weight of organic compound i in the vent gas, kg/kg-mol;

0.0416=Conversion factor for molar volume, kg-mol/m³ (@ 293 K and 760 mm Hg);

10^{-6} =Conversion from ppm, ppm⁻¹.

- (v) The annual total organic emission rate shall be determined by the following equation:

$$E_A = (E_h) (H)$$

where:

E_A =Total organic mass emission rate, kg/y;

E_h =Total organic mass flow rate for the process vent, kg/h;

H =Total annual hours of operations for the affected unit, h.

- (vi) Total organic emissions from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates (E_h , as determined in subparagraph

- (c)(1)(iv)) and by summing the annual total organic mass emission rates (E_A , as determined in subparagraph (c)(1)(v)) for all affected process vents at the facility.
- (2) The owner or operator shall record such process information as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.
- (3) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:
- (i) Sampling ports adequate for the test methods specified in paragraph (c)(1).
 - (ii) Safe sampling platform(s).
 - (iii) Safe access to sampling platform(s).
 - (iv) Utilities for sampling and testing equipment.
- (4) For the purpose of making compliance determinations, the time-weighted average of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the director's approval, be determined using the average of the results of the two other runs.
- (d) To show that a process vent associated with a hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation is not subject to the requirements of this subchapter, the owner or operator must make an initial determination that the time-weighted, annual average total organic concentration of the waste managed by the waste management unit is less than ten ppmw using one of the following two methods:
- (1) Direct measurement of the organic concentration of the waste using the following procedures:
- (i) The owner or operator must take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.
 - (ii) For waste generated onsite, the grab samples must be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation fractionation, thin-film

evaporation, solvent extraction, or air or steam stripping operation. For waste generated offsite, the grab samples must be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a tank truck and the waste is not diluted or mixed with other waste.

- (iii) Each sample shall be analyzed and the total organic concentration of the sample shall be computed using Method 9060 or 8260 of SW-846 (incorporated by reference under section 11-260-11).
- (iv) The arithmetic mean of the results of the analyses of the four samples shall apply for each waste stream managed in the unit in determining the time-weighted, annual average total organic concentration of the waste. The time-weighted average is to be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit.
- (2) Using knowledge of the waste to determine that its total organic concentration is less than ten ppmw. Documentation of the waste determination is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than ten ppmw, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.
- (e) The determination that distillation fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous wastes with time-weighted annual average total organic concentrations less than ten ppmw shall be made as follows:
 - (1) By the effective date that the facility becomes subject to the provisions of this subchapter or by the date when the waste is first managed in a waste management unit, whichever is later; and
 - (2) For continuously generated waste, annually; or
 - (3) Whenever there is a change in the waste being managed or a change in the process that generates or treats the

waste.

(f) When an owner or operator and the director do not agree on whether a distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation manages a hazardous waste with organic concentrations of at least ten ppmw based on knowledge of the waste, the procedures in Method 8260 of SW-846 (incorporated by reference under section 11-260-11) may be used to resolve the dispute. [Eff 6/18/94; am 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1034)

§11-265-1035 Recordkeeping requirements.

- (a)(1) Each owner or operator subject to the provisions of this subchapter shall comply with the recordkeeping requirements of this section.
- (2) An owner or operator of more than one hazardous waste management unit subject to the provisions of this subchapter may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.
- (b) Owners and operators must record the following information in the facility operating record:
 - (1) For facilities that comply with the provisions of paragraph 11-265-1033(a)(2), an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The schedule must also include a rationale of why the installation cannot be completed at an earlier date. The implementation schedule must be in the facility operating record by the effective date that the facility becomes subject to the provisions of this subchapter.
 - (2) Up-to-date documentation of compliance with the process vent standards in section 11-265-1032 including:
 - (i) Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility (i.e., the total emissions for all affected vents at the facility), and the approximate location within the facility of each affected unit (e.g., identify the hazardous waste management units on a facility plot plan); and
 - (ii) Information and data supporting determinations of vent emissions and emission reductions achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, determinations of vent

emissions and emission reductions must be made using operating parameter values (e.g., temperatures, flow rates or vent stream organic compounds and concentrations) that represent the conditions that result in maximum organic emissions, such as when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. If the owner or operator takes any action (e.g., managing a waste of different composition or increasing operating hours of affected waste management units) that would result in an increase in total organic emissions from affected process vents at the facility, then a new determination is required.

- (3) Where an owner or operator chooses to use test data to determine the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan. The test plan must include:
 - (i) A description of how it is determined that the planned test is going to be conducted when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. This shall include the estimated or design flow rate and organic content of each vent stream and define the acceptable operating ranges of key process and control device parameters during the test program.
 - (ii) A detailed engineering description of the closed-vent system and control device including:
 - (A) Manufacturer's name and model number of control device.
 - (B) Type of control device.
 - (C) Dimensions of the control device.
 - (D) Capacity.
 - (E) Construction materials.
 - (iii) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.
- (4) Documentation of compliance with section 11-265-1033 shall include the following information:
 - (i) A list of all information references and sources used in preparing the documentation.
 - (ii) Records, including the dates, of each compliance test required by subsection 11-265-1033(j).
 - (iii) If engineering calculations are used, a design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on

the appropriate sections of ``APTI Course 415: Control of Gaseous Emissions'' (incorporated by reference as specified in section 11-260-11) or other engineering texts acceptable to the director that present basic control device design information. Documentation provided by the control device manufacturer or vendor that describes the control device design in accordance with clauses (b)(4)(iii)(A) through (b)(4)(iii)(G) may be used to comply with this requirement. The design analysis shall address the vent stream characteristics and control device operation parameters as specified below.

- (A) For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.
- (B) For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.
- (C) For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of method and location where the vent stream is introduced into the combustion zone.
- (D) For a flare, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also consider the requirements specified in subsection 11-265-1033(d).
- (E) For a condenser, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and design

- average temperatures of the coolant fluid at the condenser inlet and outlet.
- (F) For a carbon adsorption system such as a fixed-bed adsorber that regenerates the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.
 - (G) For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.
- (iv) A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.
 - (v) A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of ninety-five percent or greater unless the total organic concentration limit of subsection 11-265-1032(a) is achieved at an efficiency less than ninety-five weight percent or the total organic emission limits of subsection 11-265-1032(a) for affected process vents at the facility can be attained by a

control device involving vapor recovery at an efficiency less than ninety-five weight percent. A statement provided by the control device manufacturer or vendor certifying that the control equipment meets the design specifications may be used to comply with this requirement.

(vi) If performance tests are used to demonstrate compliance, all test results.

(c) Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of this chapter shall be recorded and kept up-to-date in the facility operating record. The information shall include:

- (1) Description and date of each modification that is made to the closed-vent system or control device design.
- (2) Identification of operating parameter, description of monitoring device, and diagram of monitoring sensor location or locations used to comply with paragraphs 11-265-1033(f)(1) and 11-265-1033(f)(2).
- (3) Monitoring, operating and inspection information required by subsections 11-265-1033(f) through 11-265-1033(k).

(4) Date, time, and duration of each period that occurs while the control device is operating when any monitored parameter exceeds the value established in the control device design analysis as specified below:

- (i) For a thermal vapor incinerator designed to operate with a minimum residence time of 0.50 seconds at a minimum temperature of seven-hundred and sixty degrees Celsius period when the combustion temperature is below seven-hundred and sixty degrees Celsius.
- (ii) For a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of ninety-five percent or greater, period when the combustion zone temperature is more than twenty-eight degrees Celsius below the design average combustion zone temperature established as a requirement of clause (b)(4)(iii)(A).
- (iii) For a catalytic vapor incinerator, period when:
 - (A) Temperature of the vent stream at the catalyst bed inlet is more than twenty-eighty degrees Celsius below the average temperature of the inlet vent stream established as a requirement of clause (b)(4)(iii)(B); or
 - (B) Temperature difference across the catalyst bed is less than eighty percent of the design average temperature difference established as a requirement of clause (b)(4)(iii)(B).

- (iv) For a boiler or process heater, period when:
 - (A) Flame zone temperature is more than twenty-eight degrees Celsius below the design average flame zone temperature established as a requirement of clause (b)(4)(iii)(C); or
 - (B) Position changes where the vent stream is introduced to the combustion zone from the location established as a requirement of clause (b)(4)(iii)(C).
- (v) For a flare, period when the pilot flame is not ignited.
- (vi) For a condenser that complies with clause 11-265-1033(f)(2)(vi)(A), period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the condenser are more than twenty percent greater than the design outlet organic compound concentration level established as a requirement of clause (b)(4)(iii)(E).
- (vii) For a condenser that complies with clause 11-265-1033(f)(2)(vi)(B), period when:
 - (A) Temperature of the exhaust vent stream from the condenser is more than six degrees Celsius above the design average exhaust vent stream temperature established as a requirement of clause (b)(4)(iii)(E); or
 - (B) Temperature of the coolant fluid exiting the condenser is more than six degrees Celsius above the design average coolant fluid temperature at the condenser outlet established as a requirement of clause (b)(4)(iii)(E).
- (viii) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with clause 11-265-1033(f)(2)(vii)(A), period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the carbon bed are more than twenty percent greater than the design exhaust vent stream organic compound concentration level established as a requirement of clause (b)(4)(iii)(F).
- (ix) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with clause 11-265-1033(f)(2)(vii)(B), period when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time established as a requirement of

- clause (b)(4)(iii)(F).
- (5) Explanation for each period recorded under paragraph (c)(4) of the cause for control device operating parameter exceeding the design value and the measures implemented to correct the control device operation.
 - (6) For carbon adsorption systems operated subject to requirements specified in subsection 11-265-1033(g) or paragraph 11-265-1033(h)(2), date when existing carbon in the control device is replaced with fresh carbon.
 - (7) For carbon adsorption systems operated subject to requirements specified in paragraph 11-265-1033(h)(1), a log that records:
 - (i) Date and time when control device is monitored for carbon breakthrough and the monitoring device reading.
 - (ii) Date when existing carbon in the control device is replaced with fresh carbon.
 - (8) Date of each control device startup and shutdown.
 - (9) An owner or operator designating any components of a closed-vent system as unsafe to monitor pursuant to section 11-265-1033(n) shall record in a log that is kept in the facility operating record the identification of closed-vent system components that are designated as unsafe to monitor in accordance with the requirements of section 11-265-1033(n), an explanation for each closed-vent system component stating why the closed-vent system component is unsafe to monitor, and the plan for monitoring each closed-vent system component.
 - (10) When each leak is detected as specified in section 11-265-1033(k), the following information shall be recorded:
 - (i) The instrument identification number, the closed-vent system component identification number, and the operator name, initials, or identification number.
 - (ii) The date the leak was detected and the date of first attempt to repair the leak.
 - (iii) The date of successful repair of the leak.
 - (iv) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.
 - (v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
 - (A) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented

by citing the relevant sections of the written procedure.

- (B) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

(d) Records of the monitoring, operating, and inspection information required by paragraphs (c)(3) through (c)(10) shall be maintained by the owner or operator for at least 3 years following the date of each occurrence, measurement, maintenance, corrective action, or record.

(e) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, monitoring and inspection information indicating proper operation and maintenance of the control device must be recorded in the facility operating record.

(f) Up-to-date information and data used to determine whether or not a process vent is subject to the requirements in section 11-265-1032 including supporting documentation as required by paragraph 11-265-1034(d)(2) when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used, shall be recorded in a log that is kept in the facility operating record. [Eff 6/18/94; am 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1035)

§§11-265-1036 -- 11-265-1049 [Reserved]

SUBCHAPTER BB

AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS

§11-265-1050 Applicability. (a) The rules in this subchapter apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in section 11-265-1).

(b) Except as provided in subsection 11-265-1064(k), this subchapter applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least ten percent by weight that are managed in one of the following:

- (1) A unit that is subject to the permitting requirements of chapter 11-270, or
- (2) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of section 11-262-34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container)

and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of chapter 11-270, or

- (3) A unit that is exempt from permitting under the provisions of section 11-262-34(a) (i.e., a "90-day tank or container) and is not a recycling unit under the provisions of section 11-261-6.

(c) Each piece of equipment to which this subchapter applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.

(d) Equipment that is in vacuum service is excluded from the requirements of sections 11-265-1052 to 11-265-1060 if it is identified as required in paragraph 11-265-1064(g)(5).

(e) Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year is excluded from the requirements of sections 11-265-1052 through 11-265-1060 if it is identified, as required in section 11-265-1064(g)(6).

(Note: The requirements of sections 11-265-1052 through 11-265-1064 apply to equipment associated with hazardous waste recycling units previously exempt under paragraph 11-261-6(c)(1). Other exemptions under section 11-261-4 and subsection 11-265-1(c) are not affected by these requirements.) [Eff 6/18/94; am 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1050)

§11-265-1051 Definitions. As used in this subchapter, all terms shall have the meaning given them in section 11-264-1031, HRS chapter 342J, and chapters 11-260 through 11-266. [Eff 6/18/94; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1051)

§11-265-1052 Standards: Pumps in light liquid service.

- (a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in subsection 11-265-1063(b), except as provided in subsections (d), (e), and (f).
- (2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.
- (b)(1) If an instrument reading of ten thousand ppm or greater is measured, a leak is detected.
- (2) If there are indications of liquids dripping from the pump seal, a leak is detected.
- (c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than fifteen calendar days after it is detected, except as provided in section 11-265-1059.

- (2) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than five calendar days after each leak is detected.
- (d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of subsection (a), provided the following requirements are met:
 - (1) Each dual mechanical seal system must be:
 - (i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure, or
 - (ii) Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of section 11-265-1060, or
 - (iii) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.
 - (2) The barrier fluid system must not be a hazardous waste with organic concentrations ten percent or greater by weight.
 - (3) Each barrier fluid system must be equipped with a sensor that will detect failure of the seal system, the barrier fluid system or both.
 - (4) Each pump must be checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.
 - (5)
 - (i) Each sensor as described in paragraph (d)(3) must be checked daily or be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly.
 - (ii) The owner or operator must determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
 - (6)
 - (i) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in subparagraph (d)(5)(ii), a leak is detected.
 - (ii) When a leak is detected, it shall be repaired as soon as practicable, but not later than fifteen calendar days after it is detected, except as provided in section 11-265-1059.
 - (iii) A first attempt at repair (e.g., relapping the seal) shall be made no later than five calendar days after each leak is detected.
- (e) Any pump that is designated, as described in paragraph 11-265-1064(g)(2), for no detectable emissions, as indicated by an instrument reading of less than five-hundred ppm above

background, is exempt from the requirements of subsections (a), (c), and (d) if the pump meets the following requirements:

- (1) Must have no externally actuated shaft penetrating the pump housing.
- (2) Must operate with no detectable emissions as indicated by an instrument reading of less than five-hundred ppm above background as measured by the methods specified in subsection 11-265-1063(c).
- (3) Must be tested for compliance with paragraph (e)(2) initially upon designation, annually, and at other times as requested by the director.
- (f) If any pump is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of section 11-265-1060, it is exempt from the requirements of subsections (a) through (e). [Eff 6/18/94; comp]
(Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1052)

§11-265-1053 Standards: Compressors. (a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of total organic emissions to the atmosphere, except as provided in subsections (h) and (i).

(b) Each compressor seal system as required in subsection (a) shall be:

- (1) Operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure, or
- (2) Equipped with a barrier fluid system that is connected by a closed-vent system to a control device that complies with the requirements of section 11-265-1060, or
- (3) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to atmosphere.

(c) The barrier fluid must not be a hazardous waste with organic concentrations ten percent or greater by weight.

(d) Each barrier fluid system as described in subsections (a) through (c) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

- (e)(1) Each sensor as required in subsection (d) shall be checked daily or shall be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly unless the compressor is located within the boundary of an unmanned plant site, in which case the sensor must be checked daily.
- (2) The owner or operator shall determine, based on design considerations and operating experience, a criterion

that indicates failure of the seal system, the barrier fluid system or both.

(f) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under paragraph (e)(2), a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than fifteen calendar days after it is detected, except as provided in section 11-265-1059.

(2) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than five calendar days after each leak is detected.

(h) A compressor is exempt from the requirements of subsections (a) and (b) if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of section 11-265-1060, except as provided in subsection (i).

(i) Any compressor that is designated, as described in paragraph 11-265-1064(g)(2), for no detectable emission as indicated by an instrument reading of less than five-hundred ppm above background is exempt from the requirements of subsections (a) through (h) if the compressor:

(1) Is determined to be operating with no detectable emissions, as indicated by an instrument reading of less than five-hundred ppm above background, as measured by the method specified in subsection 11-265-1063(c).

(2) Is tested for compliance with paragraph (i)(1) initially upon designation, annually, and at other times as requested by the director. [Eff 6/18/94; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1053)

§11-265-1054 Standards: Pressure relief devices in gas/vapor service. (a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than five-hundred ppm above background, as measured by the method specified in subsection 11-265-1063(c).

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than five-hundred ppm above background, as soon as practicable, but no later than five calendar days after each pressure release, except as provided in section 11-265-1059.

(2) No later than five calendar days after the pressure release, the pressure relief device shall be monitored to confirm the condition of no detectable emissions, as

indicated by an instrument reading of less than five-hundred ppm above background, as measured by the method specified in subsection 11-265-1063(c).

(c) Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in section 11-265-1060 is exempt from the requirements of subsections (a) and (b). [Eff 6/18/94; comp]
(Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1054)

§11-265-1055 Standards: Sampling connecting systems. (a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. This system shall collect the sample purge for return to the process or for routing to the appropriate treatment system. Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in subsection (a) shall:

- (1) Return the purged process fluid directly to the process line; or
- (2) Collect and recycle the purged process fluid; or
- (3) Be designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with the applicable requirements of sections 11-265-1085 through 11-265-1087 or a control device that complies with the requirements of section 11-265-1060.

(c) In-situ sampling systems and sampling systems without purges are exempt from the requirements of subsections (a) and (b). [Eff 6/18/94; am 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1055)

§11-265-1056 Standards: Open-ended valves or lines.

- (a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
- (2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring hazardous waste stream flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the hazardous waste stream end is closed before the second valve is closed.

(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall

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comply with subsection (a) at all other times. [Eff 6/18/94; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1056)

§11-265-1057 Standards: Valves in gas/vapor service or in light liquid service. (a) Each valve in gas/vapor or light liquid service shall be monitored monthly to detect leaks by the methods specified in subsection 11-265-1063(b) and shall comply with subsections (b) through (e), except as provided in subsections (f), (g), and (h) and sections 11-265-1061 and 11-265-1062.

(b) If an instrument reading of ten-thousand ppm or greater is measured, a leak is detected.

(c)(1) Any valve for which a leak is not detected for two successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for two successive months.

(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than fifteen calendar days after the leak is detected, except as provided in section 11-265-1059.

(2) A first attempt at repair shall be made no later than five calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts.

(2) Replacement of bonnet bolts.

(3) Tightening of packing gland nuts.

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in paragraph 11-265-1064(g)(2), for no detectable emissions, as indicated by an instrument reading of less than five-hundred ppm above background, is exempt from the requirements of subsection (a) if the valve:

(1) Has no external actuating mechanism in contact with the hazardous waste stream.

(2) Is operated with emissions less than five-hundred ppm above background as determined by the method specified in subsection 11-265-1063(c).

(3) Is tested for compliance with paragraph (f)(2) initially upon designation, annually, and at other times as requested by the director.

(g) Any valve that is designated, as described in paragraph 11-265-1064(h)(1), as an unsafe-to-monitor valve is exempt from the requirements of subsection (a) if:

(1) The owner or operator of the valve determines that the

valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with subsection (a).

- (2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in paragraph 11-265-1064(h)(2), as a difficult-to-monitor valve is exempt from the requirements of subsection (a) if:

- (1) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than two meters above a support surface.
- (2) The hazardous waste management unit within which the valve is located was in operation before June 21, 1990.
- (3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [Eff 3/18/94; comp
] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1057)

§11-265-1058 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors. (a) Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within five days by the method specified in subsection 11-265-1063(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.

(b) If an instrument reading of ten-thousand ppm or greater is measured, a leak is detected.

- (c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than fifteen calendar days after it is detected, except as provided in section 11-265-1059.

- (2) The first attempt at repair shall be made no later than five calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under subsection 11-265-1057(e).

(e) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined) is exempt from the monitoring requirements of subsection (a) and from the recordkeeping requirements of section 11-265-1064. [Eff 6/18/94; am 3/13/99; comp
] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1058)

§11-265-1059 Standards: Delay of repair. (a) Delay of

repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a hazardous waste management unit shutdown. In such a case, repair of this equipment shall occur before the end of the next hazardous waste management unit shutdown.

(b) Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the hazardous waste management unit and that does not continue to contain or contact hazardous waste with organic concentrations at least ten percent by weight.

(c) Delay of repair for valves will be allowed if:

(1) The owner or operator determines that emissions of purged material resulting from immediate repair are greater than the emissions likely to result from delay of repair.

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with section 11-265-1060.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system.

(2) Repair is completed as soon as practicable, but not later than six months after the leak was detected.

(e) Delay of repair beyond a hazardous waste management unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the hazardous waste management unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next hazardous waste management unit shutdown will not be allowed unless the next hazardous waste management unit shutdown occurs sooner than 6 months after the first hazardous waste management unit shutdown. [Eff 6/18/94; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1059)

§11-265-1060 Standards: Closed-vent systems and control devices. (a) Owners and operators of closed-vent systems and control devices subject to this subchapter shall comply with the provisions of section 11-265-1033.

(b)(1) The owner or operator of an existing facility who can not install a closed-vent system and control device to comply with the provisions of this subchapter on the effective date that the facility becomes subject to the provisions of this subchapter must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective

- date that the facility becomes subject to this subchapter for installation and startup.
- (2) Any units that begin operation after December 21, 1990, and are subject to the provisions of this subchapter when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.
 - (3) The owner or operator of any facility in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to this subchapter shall comply with all requirements of this subchapter as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this subchapter can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subchapter. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.
 - (4) Owners and operators of facilities and units that become newly subject to the requirements of this subchapter after December 8, 1997 due to an action other than those described in paragraph (b)(3) must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this subchapter; the 30-month implementation schedule does not apply). [Eff 6/18/94; am 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1060)

§11-265-1061 Alternative standards for valves in gas/vapor service or in light liquid service: percentage of valves allowed to leak. (a) An owner or operator subject to the requirements of section 11-265-1057 may elect to have all valves within a hazardous waste management unit comply with an alternative standard which allows no greater than two percent of the valves to leak.

(b) The following requirements shall be met if an owner or operator decides to comply with the alternative standard of

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allowing two percent of valves to leak:

- (1) An owner or operator must notify the director that the owner or operator has elected to comply with the requirements of this section.
- (2) A performance test as specified in subsection (c) shall be conducted initially upon designation, annually, and at other times requested by the director.
- (3) If a valve leak is detected, it shall be repaired in accordance with subsections 11-265-1057(d) and 11-265-1057(e).
- (c) Performance tests shall be conducted in the following manner:
 - (1) All valves subject to the requirements in section 11-265-1057 within the hazardous waste management unit shall be monitored within one week by the methods specified in subsection 11-265-1063(b).
 - (2) If an instrument reading of ten-thousand ppm or greater is measured, a leak is detected.
 - (3) The leak percentage shall be determined by dividing the number of valves subject to the requirements in section 11-265-1057 for which leaks are detected by the total number of valves subject to the requirements in section 11-265-1057 within the hazardous waste management unit.
- (d) If an owner or operator decides no longer to comply with this section, the owner or operator must notify the director in writing that the work practice standard described in subsections 11-265-1057(a) through 11-265-1057(e) will be followed. [Eff 6/18/94; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1061)

§11-265-1062 Alternative standards for valves in gas/vapor service or in light liquid service: skip period leak detection and repair.

- (a)(1) An owner or operator subject to the requirements of section 11-265-1057 may elect for all valves within a hazardous waste management unit to comply with one of the alternative work practices specified in paragraphs (b)(2) and (b)(3).
- (2) An owner or operator must notify the director before implementing one of the alternative work practices.
- (b)(1) An owner or operator shall comply with the requirements for valves, as described in section 11-265-1057, except as described in paragraphs (b)(2) and (b)(3).
- (2) After two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than two percent, an owner or operator may begin to skip one of the quarterly leak detection periods (i.e., monitor for leaks once every six months) for the valves

- subject to the requirements in section 11-265-1057.
- (3) After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than two percent, an owner or operator may begin to skip three of the quarterly leak detection periods (i.e., monitor for leaks once every year) for the valves subject to the requirements in section 11-265-1057.
 - (4) If the percentage of valves leaking is greater than two percent, the owner or operator shall monitor monthly in compliance with the requirements in section 11-265-1057, but may again elect to use this section after meeting the requirements of paragraph 11-265-1057(c)(1). [Eff 6/18/94; am 3/13/99; comp
] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1062)

§11-265-1063 Test methods and procedures. (a) Each owner or operator subject to the provisions of this subchapter shall comply with the test methods and procedures requirements provided in this section.

(b) Leak detection monitoring, as required in sections 11-265-1052 through 11-265-1062, shall comply with the following requirements:

- (1) Monitoring shall comply with Reference Method 21 in 40 CFR Part 60 (1998).
- (2) The detection instrument shall meet the performance criteria of Reference Method 21.
- (3) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.
- (4) Calibration gases shall be:
 - (i) Zero air (less than ten ppm of hydrocarbon in air).
 - (ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, ten thousand ppm methane or n-hexane.
- (5) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(c) When equipment is tested for compliance with no detectable emissions, as required in subsections 11-265-1052(e), 11-265-1053(i), section 11-265-1054, and subsection 11-265-1057(f), the test shall comply with the following requirements:

- (1) The requirements of paragraphs (b)(1) through (b)(4) shall apply.
- (2) The background level shall be determined, as set forth in Reference Method 21.
- (3) The instrument probe shall be traversed around all

potential leak interfaces as close to the interface as possible as described in Reference Method 21.

- (4) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with five-hundred ppm for determining compliance.

(d) In accordance with the waste analysis plan required by subsection 11-265-13(b), an owner or operator of a facility must determine, for each piece of equipment, whether the equipment contains or contacts a hazardous waste with organic concentration that equals or exceeds ten percent by weight using the following:

- (1) Methods described in ASTM Methods D 2267-88, E 169-87, E 168-88, E 260-85 (incorporated by reference under section 11-260-11);
- (2) Method 9060 or 8260 of SW-846 (incorporated by reference under section 11-260-11); or
- (3) Application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced. Documentation of a waste determination by knowledge is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to have a total organic content less than ten percent, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

(e) If an owner or operator determines that a piece of equipment contains or contacts a hazardous waste with organic concentrations at least ten percent by weight, the determination can be revised only after following the procedures in paragraph (d)(1) or (d)(2).

(f) When an owner or operator and the director do not agree on whether a piece of equipment contains or contacts a hazardous waste with organic concentrations at least ten percent by weight, the procedures in paragraph (d)(1) or (d)(2) can be used to resolve the dispute.

(g) Samples used in determining the percent organic content shall be representative of the highest total organic content hazardous waste that is expected to be contained in or contact the equipment.

(h) To determine if pumps or valves are in light liquid service, the vapor pressures of constituents may be obtained from standard reference texts or may be determined by ASTM D-2879-86 (incorporated by reference under section 11-260-11).

(i) Performance tests to determine if a control device achieves ninety-five weight percent organic emission reduction shall comply with the procedures of paragraphs 11-265-1034(c)(1) through 11-265-1034(c)(4). [Eff 6/18/94; am 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1063)

§11-265-1064 Recordkeeping requirements.

- (a)(1) Each owner or operator subject to the provisions of this subchapter shall comply with the recordkeeping requirements of this section.
- (2) An owner or operator of more than one hazardous waste management unit subject to the provisions of this subchapter may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.
- (b) Owners and operators must record the following information in the facility operating record:
 - (1) For each piece of equipment to which subchapter BB of chapter 11-265 applies:
 - (i) Equipment identification number and hazardous waste management unit identification.
 - (ii) Approximate locations within the facility (e.g., identify the hazardous waste management unit on a facility plot plan).
 - (iii) Type of equipment (e.g., a pump or pipeline valve).
 - (iv) Percent-by-weight total organics in the hazardous waste stream at the equipment.
 - (v) Hazardous waste state at the equipment (e.g., gas/vapor or liquid).
 - (vi) Method of compliance with the standard (e.g., ``monthly leak detection and repair'' or ``equipped with dual mechanical seals'').
 - (2) For facilities that comply with the provisions of paragraph 11-265-1033(a)(2), an implementation schedule as specified in paragraph 11-265-1033(a)(2).
 - (3) Where an owner or operator chooses to use test data to demonstrate the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan as specified in paragraph 11-265-1035(b)(3).
 - (4) Documentation of compliance with section 11-265-1060, including the detailed design documentation or performance test results specified in paragraph 11-265-1035(b)(4).
- (c) When each leak is detected as specified in sections 11-265-1052, 11-265-1053, 11-265-1057, and 11-265-1058, the

following requirements apply:

- (1) A weatherproof and readily visible identification, marked with the equipment identification number, the date evidence of a potential leak was found in accordance with subsection 11-265-1058(a), and the date the leak was detected, shall be attached to the leaking equipment.
- (2) The identification on equipment, except on a valve, may be removed after it has been repaired.
- (3) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in subsection 11-265-1057(c) and no leak has been detected during those 2 months.
- (d) When each leak is detected as specified in sections 11-265-1052, 11-265-1053, 11-265-1057, and 11-265-1058, the following information shall be recorded in an inspection log and shall be kept in the facility operating record:
 - (1) The instrument and operator identification numbers and the equipment identification number.
 - (2) The date evidence of a potential leak was found in accordance with subsection 11-265-1058(a).
 - (3) The date the leak was detected and the dates of each attempt to repair the leak.
 - (4) Repair methods applied in each attempt to repair the leak.
 - (5) ``Above 10,000'' if the maximum instrument reading measured by the methods specified in subsection 11-265-1063(b) after each repair attempt is equal to or greater than ten-thousand ppm.
 - (6) ``Repair delayed'' and the reason for the delay if a leak is not repaired within fifteen calendar days after discovery of the leak.
 - (7) Documentation supporting the delay of repair of a valve in compliance with subsection 11-265-1059(c).
 - (8) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a hazardous waste management unit shutdown.
 - (9) The expected date of successful repair of the leak if a leak is not repaired within fifteen calendar days.
 - (10) The date of successful repair of the leak.
- (e) Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of section 11-265-1060 shall be recorded and kept up-to-date in the facility operating record as specified in subsection 11-265-1035(c). Design documentation is specified in paragraphs 11-265-1035(c)(1) and 11-265-1035(c)(2) and monitoring, operating, and inspection information in paragraphs 11-265-1035(c)(3) through 11-265-1035(c)(8).
- (f) For a control device other than a thermal vapor

incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, monitoring and inspection information indicating proper operation and maintenance of the control device must be recorded in the facility operating record.

(g) The following information pertaining to all equipment subject to the requirements in sections 11-265-1052 through 11-265-1060 shall be recorded in a log that is kept in the facility operating record:

- (1) A list of identification numbers for equipment (except welded fittings) subject to the requirements of this subchapter.
- (2)
 - (i) A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions, as indicated by an instrument reading of less than five-hundred ppm above background, under the provisions of subsections 11-265-1052(e), 11-265-1053(i), and 11-265-1057(f).
 - (ii) The designation of this equipment as subject to the requirements of subsection 11-265-1052(e), 11-265-1053(i), or 11-265-1057(f) shall be signed by the owner or operator.
- (3) A list of equipment identification numbers for pressure relief devices required to comply with subsection 11-265-1054(a).
- (4)
 - (i) The dates of each compliance test required in subsections 11-265-1052(e), 11-265-1053(i), section 11-265-1054, and subsection 11-265-1057(f).
 - (ii) The background level measured during each compliance test.
 - (iii) The maximum instrument reading measured at the equipment during each compliance test.
- (5) A list of identification numbers for equipment in vacuum service.
- (6) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year.

(h) The following information pertaining to all valves subject to the requirements of subsections 11-265-1057(g) and 11-265-1057(h) shall be recorded in a log that is kept in the facility operating record:

- (1) A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve.
- (2) A list of identification numbers for valves that are

designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.

(i) The following information shall be recorded in the facility operating record for valves complying with section 11-265-1062:

- (1) A schedule of monitoring.
- (2) The percent of valves found leaking during each monitoring period.

(j) The following information shall be recorded in a log that is kept in the facility operating record:

- (1) Criteria required in subparagraph 11-265-1052(d)(5)(ii) and paragraph 11-265-1053(e)(2) and an explanation of the criteria.
- (2) Any changes to these criteria and the reasons for the changes.

(k) The following information shall be recorded in a log that is kept in the facility operating record for use in determining exemptions as provided in the applicability section of this subchapter and other specific subchapters:

- (1) An analysis determining the design capacity of the hazardous waste management unit.
- (2) A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to the requirements in sections 11-265-1052 through 11-265-1060 and an analysis determining whether these hazardous wastes are heavy liquids.
- (3) An up-to-date analysis and the supporting information and data used to determine whether or not equipment is subject to the requirements in sections 11-265-1052 through 11-265-1060. The record shall include supporting documentation as required by paragraph 11-265-1063(d)(3) when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used. If the owner or operator takes any action (e.g., changing the process that produced the waste) that could result in an increase in the total organic content of the waste contained in or contacted by equipment determined not to be subject to the requirements in sections 11-265-1052 through 11-265-1060, then a new determination is required.

(l) Records of the equipment leak information required by subsection (d) and the operating information required by subsection (e) need be kept only three years.

(m) The owner or operator of any facility with equipment that is subject to this subchapter and to leak detection, monitoring, and repair requirements under regulations at 40 CFR part 60, part 61, or part 63 may elect to determine compliance with this subchapter either by documentation pursuant to section

11-265-1064, or by documentation of compliance with the regulations at 40 CFR part 60, part 61, or part 63 pursuant to the relevant provisions of the regulations at 40 CFR part 60, part 61, or part 63. The documentation of compliance under regulation at 40 CFR part 60, part 61, or part 63 shall be kept with or made readily available with the facility operating record. [Eff 6/18/94; am 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1064)

§§ 11-265-1065 -- 11-265-1079 [Reserved]

SUBCHAPTER CC

AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS

§11-265-1080 Applicability. (a) The requirements of this subchapter apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to either subchapter I, J, or K except as section 11-265-1 and subsection (b) provide otherwise.

(b) The requirements of this subchapter do not apply to the following waste management units at the facility:

- (1) A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996.
- (2) A container that has a design capacity less than or equal to 0.1 m³.
- (3) A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.
- (4) A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.
- (5) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is generated as the result of implementing remedial activities required under the RCRA corrective action authorities of 3004(u), 3004(v) or 3008(h), CERCLA authorities, section 342J-36, HRS, or similar federal or State authorities.
- (6) A waste management unit that is used solely for the

management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Federal Atomic Energy Act and the Federal Nuclear Waste Policy Act.

- (7) A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Federal Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. For the purpose of complying with this paragraph, a tank for which the air emission control includes an enclosure, as opposed to a cover, must be in compliance with the enclosure and control device requirements of section 11-265-1085(i), except as provided in section 11-265-1083(c)(5).
- (8) A tank that has a process vent as defined in section 11-264-1031.

(c) For the owner and operator of a facility subject to this subchapter who has received a final permit under RCRA section 3005 prior to December 6, 1996, the following requirements apply:

- (1) The requirements of chapter 11-264, subchapter CC shall be incorporated into the permit when a State hazardous waste management permit is issued in accordance with the requirements of section 11-271-15 or the EPA-issued RCRA permit is reviewed in accordance with the requirements of section 11-270-50(d).
- (2) Until the date when the State hazardous waste management permit is issued in accordance with the requirements of section 11-271-15 or the EPA-issued RCRA permit is reviewed in accordance with the requirements of section 11-270-50(d), the owner and operator is subject to the requirements of this subchapter.

(d) The requirements of this subchapter, except for the recordkeeping requirements specified in section 11-265-1090(i), are administratively stayed for a tank or a container used for the management of hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations when the owner or operator of the unit meets all of the following conditions:

- (1) The owner or operator identifies that the tank or container receives hazardous waste generated by an organic peroxide manufacturing process producing more

than one functional family of organic peroxides or multiple organic peroxides within one functional family, that one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures, and

that organic peroxides are the predominant products manufactured by the process. For the purpose of meeting the conditions of this paragraph, "organic peroxide" means an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

- (2) The owner or operator prepares documentation, in accordance with the requirements of section 11-265-1090(i), explaining why an undue safety hazard would be created if air emission controls specified in sections 11-265-1085 through 11-265-1088 are installed and operated on the tanks and containers used at the facility to manage the hazardous waste generated by the organic peroxide manufacturing process or processes meeting the conditions of paragraph (d)(1).
- (3) The owner or operator notifies the director in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting the conditions of paragraph (d)(1) are managed at the facility in tanks or containers meeting the conditions of paragraph (d)(2). The notification shall state the name and address of the facility, and be signed and dated by an authorized representative of the facility owner or operator. [Eff 3/13/99; comp]
(Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1080)

§11-265-1081 Definitions. As used in this subchapter, all terms not defined herein shall have the meaning given to them by chapter 342J, HRS and chapters 11-260 through 11-266 of the Hawaii Administrative Rules.

"Average volatile organic concentration" or "average VO concentration" means the mass-weighted average volatile organic concentration of a hazardous waste as determined in accordance with the requirements of section 11-265-1084.

"Closure device" means a cap, hatch, lid, plug, seal, valve, or other type of fitting that blocks an opening in a cover such that when the device is secured in the closed position it prevents or reduces air pollutant emissions to the atmosphere. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

"Continuous seal" means a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a tank. A continuous seal may be a vapor-mounted seal, liquid-mounted seal, or metallic shoe seal. A

continuous seal may be constructed of fastened segments so as to form a continuous seal.

"Cover" means a device that provides a continuous barrier over the hazardous waste managed in a unit to prevent or reduce air pollutant emissions to the atmosphere. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit or a cover may be formed by structural features permanently integrated into the design of the unit.

"Enclosure" means a structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapors through a closed-vent system to a control device.

"External floating roof" means a pontoon-type or double-deck type cover that rests on the surface of the material managed in a tank with no fixed roof.

"Fixed roof" means a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the material managed in the unit.

"Floating membrane cover" means a cover consisting of a synthetic flexible membrane material that rests upon and is supported by the hazardous waste being managed in a surface impoundment.

"Floating roof" means a cover consisting of a double deck, pontoon single deck, or internal floating cover which rests upon and is supported by the material being contained, and is equipped with a continuous seal.

"Hard-piping" means pipe or tubing that is manufactured and properly installed in accordance with relevant standards and good engineering practices.

"In light material service" means the container is used to manage a material for which both of the following conditions apply: The vapor pressure of one or more of the organic constituents in the material is greater than 0.3 kilopascals (kPa) at 20°C; and the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20°C is equal to or greater than 20 percent by weight.

"Internal floating roof" means a cover that rests or floats on the material surface (but not necessarily in complete contact with it) inside a tank that has a fixed roof.

"Liquid-mounted seal" means a foam or liquid-filled primary seal mounted in contact with the hazardous waste between the tank wall and the floating roof continuously around the circumference of the tank.

"Malfunction" means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor

maintenance or careless operation are not malfunctions.

"Maximum organic vapor pressure" means the sum of the individual organic constituent partial pressures exerted by the material contained in a tank, at the maximum vapor pressure-causing conditions (i.e., temperature, agitation, pH effects of combining wastes, etc.) reasonably expected to occur in the tank. For the purpose of this subchapter, maximum organic vapor pressure is determined using the procedures specified in section 11-265-1084(c).

"Metallic shoe seal" means a continuous seal that is constructed of metal sheets which are held vertically against the wall of the tank by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

"No detectable organic emissions" means no escape of organics to the atmosphere as determined using the procedure specified in section 11-265-1084(d).

"Point of waste origination" means as follows:

- (1) When the facility owner or operator is the generator of the hazardous waste, the point of waste origination means the point where a solid waste produced by a system, process, or waste management unit is determined to be a hazardous waste as defined in chapter 11-261.
- (2) When the facility owner and operator are not the generator of the hazardous waste, point of waste origination means the point where the owner or operator accepts delivery or takes possession of the hazardous waste.

"Point of waste treatment" means the point where a hazardous waste to be treated in accordance with section 11-265-1083(c)(2) exits the treatment process. Any waste determination shall be made before the waste is conveyed, handled, or otherwise managed in a manner that allows the waste to volatilize to the atmosphere.

"Safety device" means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subchapter, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control

equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

"Single-seal system" means a floating roof having one continuous seal. This seal may be vapor-mounted, liquid-mounted, or a metallic shoe seal.

"Vapor-mounted seal" means a continuous seal that is mounted such that there is a vapor space between the hazardous waste in the unit and the bottom of the seal.

"Volatile organic concentration" or "VO concentration" means the fraction by weight of the volatile organic compounds contained in a hazardous waste expressed in terms of parts per million (ppmw) as determined by direct measurement or by knowledge of the waste in accordance with the requirements of section 11-265-1084. For the purpose of determining the VO concentration of a hazardous waste, organic compounds with a Henry's law constant value of at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in the liquid-phase (0.1 Y/X) (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m³) at 25 degrees Celsius must be included. Appendix VI of this chapter presents a list of compounds known to have a Henry's law constant value less than the cutoff level.

"Waste determination" means performing all applicable procedures in accordance with the requirements of section 11-265-1084 to determine whether a hazardous waste meets standards specified in this subchapter. Examples of a waste determination include performing the procedures in accordance with the requirements of section 11-265-1084 to determine the average VO concentration of a hazardous waste at the point of waste origination; the average VO concentration of a hazardous waste at the point of waste treatment and comparing the results to the exit concentration limit specified for the process used to treat the hazardous waste; the organic reduction efficiency and the organic biodegradation efficiency for a biological process used to treat a hazardous waste and comparing the results to the applicable standards; or the maximum volatile organic vapor pressure for a hazardous waste in a tank and comparing the results to the applicable standards.

"Waste stabilization process" means any physical or chemical process used to either reduce the mobility of hazardous constituents in a hazardous waste or eliminate free liquids as determined by Test Method 9095 (Paint Filter Liquids Test) in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846, Third Edition, September 1986, as amended by Update I, November 15, 1992 (incorporated by reference--refer to section 11-260-11). A waste stabilization process includes mixing the hazardous waste with binders or other

materials, and curing the resulting hazardous waste and binder mixture. Other synonymous terms used to refer to this process are "waste fixation" or "waste solidification." This does not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid. [Eff 3/18/99; comp] (Auth: HRS §§342J-2, 342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1081)

§11-265-1082 Schedule for implementation of air emission standards. (a) Owners or operators of facilities existing on December 6, 1996, and subject to subchapters I, J, and K shall meet the following requirements:

- (1) Install and begin operation of all control equipment or waste management units required to comply with this subchapter and complete modifications of the production or treatment processes to satisfy exemption criteria in accordance with section 11-265-1083(c).
 - (2) [Reserved]
- (b) Owners or operators of facilities and units in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to subchapters I, J, or K shall meet the following requirements:
- (1) Install and begin operation of control equipment or waste management units required to comply with this subchapter, and complete modifications of production or treatment processes to satisfy exemption criteria of section 11-265-1083(c) by the effective date of the amendment, except as provided for in paragraph (b)(2).
 - (2) When control equipment or waste management units required to comply with this subchapter cannot be installed and begin operation, or when modifications of production or treatment processes to satisfy exemption criteria of section 11-265-1083(c) cannot be completed by the effective date of the amendment, the owner or operator shall:
 - (i) Install and begin operation of the control equipment or waste management unit, and complete modification of production or treatment processes as soon as possible but no later than 30 months after the effective date of the amendment.
 - (ii) For facilities subject to the recordkeeping requirements of section 11-265-73, enter and maintain the implementation schedule specified in subparagraph (a)(2)(ii) in the operating record no later than the effective date of the amendment, or
 - (iii) For facilities not subject to section 11-265-73, the owner or operator shall enter and maintain the implementation schedule specified in subparagraph

(a)(2)(ii) in a permanent, readily available file located at the facility site no later than the effective date of the amendment.

(c) Owners and operators of facilities and units that become newly subject to the requirements of this subchapter after the effective date of the State rules due to an action other than those described in subsection (b) must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this subchapter; the 30-month implementation schedule does not apply).

(d) The director may elect to extend the implementation date for control equipment at a facility, on a case by case basis, to a date later than the effective date of the rules, when special circumstances that are beyond the facility owner's or operator's control delay installation or operation of control equipment, and the owner or operator has made all reasonable and prudent attempts to comply with the requirements of this subchapter. [Eff 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1082)

§11-265-1083 Standards: General. (a) This section applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to this subchapter.

(b) The owner or operator shall control air pollutant emissions from each hazardous waste management unit in accordance with standards specified in sections 11-265-1085 through 11-265-1088, as applicable to the hazardous waste management unit, except as provided for in subsection (c).

(c) A tank, surface impoundment, or container is exempt from standards specified in sections 11-265-1085 through 11-265-1088, as applicable, provided that the waste management unit is one of the following:

- (1) A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average VO concentration at the point of waste origination of less than 500 parts per million by weight (ppmw). The average VO concentration shall be determined using the procedures specified in section 11-265-1084(a). The owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the hazardous waste streams entering the unit.
- (2) A tank, surface impoundment, or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves any one of the following conditions:
 - (i) A process that removes or destroys the organics

contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C_t) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in section 11-265-1084(b).

- (ii) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 100 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in section 11-265-1084(b).
- (iii) A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate (MR) for the process is equal to or greater than the required organic mass removal rate (RMR) established for the process. The required organic mass removal rate and the actual organic mass removal rate for the process shall be determined using the procedures specified in section 11-265-1084(b).
- (iv) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:
 - (A) The organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency (R_{bio}) for the process is equal to or greater than 95 percent. The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined using the procedures specified in section 11-265-1084(b).
 - (B) The total actual organic mass biodegradation rate (MR_{bio}) for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate (RMR). The required organic mass removal rate and the actual organic mass biodegradation rate for the process shall be determined using the procedures specified in section 11-265-

1084(b).

- (v) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions:
 - (A) From the point of waste origination through the point where the hazardous waste enters the treatment process, the hazardous waste is managed continuously in waste management units which use air emission controls in accordance with the standards specified in sections 11-265-1085 through 11-265-1088, as applicable to the waste management unit.
 - (B) From the point of waste origination through the point where the hazardous waste enters the treatment process, any transfer of the hazardous waste is accomplished through continuous hard-piping or other closed system transfer that does not allow exposure of the waste to the atmosphere. DOH considers a drain system that meets the requirements of 40 CFR part 63, subpart RR--National Emission Standards for Individual Drain Systems to be a closed system.
 - (C) The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual waste streams entering the process or 500 ppmw, whichever value is lower. The average VO concentration of each individual waste stream at the point of waste origination shall be determined using the procedures specified in section 11-265-1084(a). The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in section 11-265-1084(b).
- (vi) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent and the owner or operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than 10,000 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste origination shall be determined using the procedures specified in sections 11-265-

- 1084(b) and 11-265-1084(a), respectively.
- (vii) A hazardous waste incinerator for which the owner or operator has either:
 - (A) Been issued a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 264, subpart O;
 - (B) Has designed and operates the incinerator in accordance with the interim status requirements of chapter 11-264, subchapter O; or
 - (C) Been issued a State hazardous waste management permit under chapter 11-270 which implements the requirements of chapter 11-264, subchapter O.
 - (viii) A boiler or industrial furnace for which the owner or operator has either:
 - (A) Been issued a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 266, subpart H;
 - (B) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of chapter 11-266, subchapter H; or
 - (C) Been issued a State hazardous waste management permit under chapter 11-270 which implements the requirements of chapter 11-266, subchapter H.
 - (ix) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of subparagraphs (c)(2)(i) through (c)(2)(vi), the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:
 - (A) If Method 25D in 40 CFR part 60, appendix A is used for the analysis, one-half the blank value determined in the method at section 4.4 of Method 25D in 40 CFR part 60, appendix A, or a value of 25 ppmw, whichever is less.
 - (B) If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant value at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m³) at 25 degrees Celsius.
 - (3) A tank or surface impoundment used for biological treatment of hazardous waste in accordance with the

requirements of subparagraph (c)(2)(iv).

- (4) A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:

(i) Meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in chapter 11-268--Land Disposal Restrictions under Table "Treatment Standards for Hazardous Waste" in section 11-268-40; or

(ii) The organic hazardous constituents in the waste have been treated by the treatment technology established by the EPA for the waste in section 11-268-42(a), or have been removed or destroyed by an equivalent method of treatment approved by EPA pursuant to 40 CFR 268.42(b) and approved by the State pursuant to section 11-268-51.

- (5) A tank used for bulk feed of hazardous waste to a waste incinerator and all of the following conditions are met:

(i) The tank is located inside an enclosure vented to a control device that is designed and operated in accordance with all applicable requirements specified under 40 CFR part 61, subpart FF--National Emission Standards for Benzene Waste Operations for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year;

(ii) The enclosure and control device serving the tank were installed and began operation prior to November 25, 1996; and

(iii) The enclosure is designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical or electrical equipment; or to direct air flow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" annually.

(d) The director may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of this section as follows:

- (1) The waste determination for average VO concentration of a hazardous waste at the point of waste origination shall be performed using direct measurement in accordance with the applicable requirements of section 11-265-1084(a). The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of section 11-265-1084(b).
- (2) In performing a waste determination pursuant to paragraph (d)(1), the sample preparation and analysis shall be conducted as follows:
 - (i) In accordance with the method used by the owner or operator to perform the waste analysis, except in the case specified in subparagraph (d)(2)(ii).
 - (ii) If the director determines that the method used by the owner or operator was not appropriate for the hazardous waste managed in the tank, surface impoundment, or container, then the director may choose an appropriate method.
- (3) In a case when the owner or operator is requested to perform the waste determination, the director may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.
- (4) In a case when the results of the waste determination performed or requested by the director do not agree with the results of a waste determination performed by the owner or operator using knowledge of the waste, then the results of the waste determination performed in accordance with the requirements of paragraph (d)(1) shall be used to establish compliance with the requirements of this subchapter.
- (5) In a case when the owner or operator has used an averaging period greater than 1 hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the director may elect to establish compliance with this subchapter by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a 1-hour period as follows:
 - (i) The average VO concentration of the hazardous waste at the point of waste origination shall be determined by direct measurement in accordance with the requirements of section 11-265-1084(a).
 - (ii) Results of the waste determination performed or requested by the director showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than 500 ppmw shall constitute noncompliance with

this subchapter except in a case as provided for in subparagraph (d)(5)(iii).

- (iii) For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than 1 hour to be less than 500 ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given 1-hour period may be equal to or greater than 500 ppmw, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (e.g., test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of sections 11-265-1084(a) and 11-265-1090 shall be considered by the director together with the results of the waste determination performed or requested by the director in establishing compliance with this subchapter. [Eff 3/13/99; comp]
(Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35)
(Imp: 40 C.F.R. §265.1083)

§11-265-1084 Waste determination procedures. (a) Waste determination procedure to determine average volatile organic (VO) concentration of a hazardous waste at the point of waste origination.

- (1) An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under the provisions of section 11-265-1083(c)(1) from using air emission controls in accordance with standards specified in sections 11-265-1085 through 11-265-1088, as applicable to the waste management unit.
- (2) For a waste determination that is required by paragraph (a)(1), the average VO concentration of a hazardous waste at the point of waste origination shall be determined using either direct measurement as specified in paragraph (a)(3) or by knowledge as specified in paragraph (a)(4).
- (3) Direct measurement to determine average VO concentration of a hazardous waste at the point of waste origination.
 - (i) Identification. The owner or operator shall identify and record the point of waste origination for the hazardous waste.

- (ii) Sampling. Samples of the hazardous waste stream shall be collected at the point of waste origination in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.
 - (A) The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed 1 year.
 - (B) A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.
 - (C) All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (incorporated by reference--refer to section 11-260-11(a)), or in Method 25D in 40 CFR

part 60, appendix A.

- (iii) Analysis. Each collected sample shall be prepared and analyzed in accordance with one or more of the methods listed in clauses (a)(3)(iii)(A) through (a)(3)(iii)(I), including appropriate quality assurance and quality control (QA/QC) checks and use of target compounds for calibration. If Method 25D in 40 CFR part 60, appendix A is not used, then one or more methods should be chosen that are appropriate to ensure that the waste determination accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m³) at 25 degrees Celsius. Each of the analytical methods listed in clauses (a)(3)(iii)(B) through (a)(3)(iii)(G) has an associated list of approved chemical compounds, for which DOH considers the method appropriate for measurement. If an owner or operator uses Method 624, 625, 1624, or 1625 in 40 CFR part 136, appendix A to analyze one or more compounds that are not on that method's published list, the Alternative Test Procedure contained in 40 CFR 136.4 and 136.5 must be followed. If an owner or operator uses EPA Method 8260 or 8270 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (incorporated by reference--refer to section 11-260-11(a)) to analyze one or more compounds that are not on that method's published list, the procedures in clause (a)(3)(iii)(H) must be followed. At the owner's or operator's discretion, the concentration of each individual chemical constituent measured in the waste by a method other than Method 25D may be corrected to the concentration had it been measured using Method 25D by multiplying the measured concentration by the constituent-specific adjustment factor (f_{m25D}) as specified in subparagraph (a)(4)(iii). Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.
 - (A) Method 25D in 40 CFR part 60, appendix A.
 - (B) Method 624 in 40 CFR part 136, appendix A.
 - (C) Method 625 in 40 CFR part 136, appendix A.
 Perform corrections to the compounds for which the analysis is being conducted based

on the "accuracy as recovery" using the factors in Table 7 of the method.

- (D) Method 1624 in 40 CFR part 136, appendix A.
- (E) Method 1625 in 40 CFR part 136, appendix A.
- (F) Method 8260 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (incorporated by reference--refer to section 11-260-11(a)). Maintain a formal quality assurance program consistent with the requirements of Method 8260. The quality assurance program shall include the following elements:
 - (1) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.
 - (2) Measurement of the overall accuracy and precision of the specific procedures.
- (G) Method 8270 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (incorporated by reference--refer to section 11-260-11(a)). Maintain a formal quality assurance program consistent with the requirements of Method 8270. The quality assurance program shall include the following elements:
 - (1) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, and introduction, and analysis steps.
 - (2) Measurement of the overall accuracy and precision of the specific procedures.
- (H) Any other EPA standard method that has been validated in accordance with "Alternative Validation Procedure for EPA Waste and Wastewater Methods", 40 CFR part 63, appendix D. As an alternative, other EPA standard methods may be validated by the procedure specified in clause (a)(3)(iii)(I).
- (I) Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or Section 5.3, and the corresponding calculations in Section 6.1 or Section 6.3, of Method 301 in 40 CFR part

63, appendix A. The data are acceptable if they meet the criteria specified in Section 6.1.5 or Section 6.3.3 of Method 301. If correction is required under section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

(iv) Calculations.

- (A) The average VO concentration (\bar{C}) on a mass-weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with subparagraphs (a)(3)(ii) and (a)(3)(iii) and the following equation:

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^n (Q_i \times C_i)$$

Where:

\bar{C} = Average VO concentration of the hazardous waste at the point of waste origination on a mass-weighted basis, ppmw.

i = Individual waste determination "i" of the hazardous waste.

n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed 1 year).

Q_i = Mass quantity of hazardous waste stream represented by C_i , kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of waste determination "i" as determined in accordance with the requirements of subparagraph (a)(3)(iii) (i.e. the average of the four or more samples specified in clause (a)(3)(ii)(B)), ppmw.

- (B) For the purpose of determining C_i , for individual waste samples analyzed in accordance with subparagraph (a)(3)(iii), the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:

- (1) If Method 25D in 40 CFR part 60, Appendix A is used for the analysis, one-half the blank value determined in the method at section 4.4 of Method 25D

- in 40 CFR part 60, appendix A.
- (2) If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase ($0.1 Y/X$) (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/ m^3) at 25 degrees Celsius.
- (v) Provided that the test method is appropriate for the waste as required under subparagraph (a)(3)(iii), DOH will determine compliance based on the test method used by the owner or operator as recorded pursuant to section 11-265-1090(f)(1).
- (4) Use of owner or operator knowledge to determine average VO concentration of a hazardous waste at the point of waste origination.
- (i) Documentation shall be prepared that presents the information used as the basis for the owner's or operator's knowledge of the hazardous waste stream's average VO concentration. Examples of information that may be used as the basis for knowledge include: Material balances for the source or process generating the hazardous waste stream; constituent-specific chemical test data for the hazardous waste stream from previous testing that are still applicable to the current waste stream; previous test data for other locations managing the same type of waste stream; or other knowledge based on information included in manifests, shipping papers, or waste certification notices.
- (ii) If test data are used as the basis for knowledge, then the owner or operator shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VO concentration. For example, an owner or operator may use organic concentration test data for the hazardous waste stream that are validated in accordance with Method 301 in 40 CFR part 63, appendix A as the basis for knowledge of the waste.
- (iii) An owner or operator using chemical constituent-specific concentration test data as the basis for knowledge of the hazardous waste may adjust the test data to the corresponding average VO concentration value which would have been obtained

had the waste samples been analyzed using Method 25D in 40 CFR part 60, appendix A. To adjust these data, the measured concentration for each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}).

- (iv) In the event that the director and the owner or operator disagree on a determination of the average VO concentration for a hazardous waste stream using knowledge, then the results from a determination of average VO concentration using direct measurement as specified in paragraph (a)(3) shall be used to establish compliance with the applicable requirements of this subchapter. The director may perform or request that the owner or operator perform this determination using direct measurement. The owner or operator may choose one or more appropriate methods to analyze each collected sample in accordance with the requirements of subparagraph (a)(3)(iii).

(b) Waste determination procedures for treated hazardous waste.

- (1) An owner or operator shall perform the applicable waste determination for each treated hazardous waste placed in a waste management unit exempted under the provisions of sections 11-265-1083(c)(2)(i) through (c)(2)(vi) from using air emission controls in accordance with standards specified in sections 11-265-1085 through 11-265-1088, as applicable to the waste management unit.
- (2) The owner or operator shall designate and record the specific provision in section 11-265-1083(c)(2) under which the waste determination is being performed. The waste determination for the treated hazardous waste shall be performed using the applicable procedures specified in paragraphs (b)(3) through (b)(9).
- (3) Procedure to determine the average VO concentration of a hazardous waste at the point of waste treatment.
 - (i) Identification. The owner or operator shall identify and record the point of waste treatment for the hazardous waste.
 - (ii) Sampling. Samples of the hazardous waste stream shall be collected at the point of waste treatment in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.
 - (A) The averaging period to be used for determining the average VO concentration for

- the hazardous waste stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed 1 year.
- (B) A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.
 - (C) All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporated by reference--refer to section 11-260-11(a)), or in Method 25D in 40 CFR part 60, appendix A.
- (iii) Analysis. Each collected sample shall be prepared and analyzed in accordance with one or more of the methods listed in clauses (b)(3)(iii)(A) through (b)(3)(iii)(I), including appropriate quality assurance and quality control (QA/QC) checks and use of target compounds for calibration. When the owner or operator is making a waste determination for a treated hazardous waste that is to be

compared to an average VO concentration at the point of waste origination or the point of waste entry to the treatment system, to determine if the conditions of sections 11-264-1082(c)(2)(i) through (c)(2)(vi), or section 11-265-1083(c)(2)(i) through (c)(2)(vi) are met, then the waste samples shall be prepared and analyzed using the same method or methods as were used in making the initial waste determinations at the point of waste origination or at the point of entry to the treatment system. If Method 25D in 40 CFR part 60, appendix A is not used, then one or more methods should be chosen that are appropriate to ensure that the waste determination accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m³) at 25 degrees Celsius. Each of the analytical methods listed in clauses (b)(3)(iii)(B) through (b)(3)(iii)(G) has an associated list of approved chemical compounds, for which EPA considers the method appropriate for measurement. If an owner or operator uses EPA Method 624, 625, 1624, or 1625 in 40 CFR part 136, appendix A to analyze one or more compounds that are not on that method's published list, the Alternative Test Procedure contained in 40 CFR 136.4 and 136.5 must be followed. If an owner or operator uses EPA Method 8260 or 8270 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (incorporated by reference--refer to section 11-260-11(a)) to analyze one or more compounds that are not on that method's published list, the procedures in clause (b)(3)(iii)(H) must be followed. At the owner's or operator's discretion, the concentration of each individual chemical constituent measured in the waste by a method other than Method 25D may be corrected to the concentration had it been measured using Method 25D by multiplying the measured concentration by the constituent-specific adjustment factor (f_{m25D}) as specified in subparagraph (b)(4)(iii). Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

(A) Method 25D in 40 CFR part 60, appendix A.

- (B) Method 624 in 40 CFR part 136, appendix A.
- (C) Method 625 in 40 CFR part 136, appendix A. Perform corrections to the compounds for which the analysis is being conducted based on the "accuracy as recovery" using the factors in Table 7 of the method.
- (D) Method 1624 in 40 CFR part 136, appendix A.
- (E) Method 1625 in 40 CFR part 136, appendix A.
- (F) Method 8260 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (incorporated by reference--refer to section 11-260-11(a)). Maintain a formal quality assurance program consistent with the requirements of Method 8260. The quality assurance program shall include the following elements:
 - (1) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.
 - (2) Measurement of the overall accuracy and precision of the specific procedures.
- (G) Method 8270 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (incorporated by reference--refer to section 11-260-11(a)). Maintain a formal quality assurance program consistent with the requirements of Method 8270. The quality assurance program shall include the following elements:
 - (1) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.
 - (2) Measurement of the overall accuracy and precision of the specific procedures.
- (H) Any other EPA standard method that has been validated in accordance with "Alternative Validation Procedure for EPA Waste and Wastewater Methods", 40 CFR part 63, appendix D. As an alternative, other EPA standard methods may be validated by the procedure specified in clause (b)(3)(iii)(I).
- (I) Any other analysis method that has been

validated in accordance with the procedures specified in Section 5.1 or Section 5.3, and the corresponding calculations in Section 6.1 or Section 6.3, of Method 301 in 40 CFR part 63, appendix A. The data are acceptable if they meet the criteria specified in Section 6.1.5 or Section 6.3.3 of Method 301. If correction is required under section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

- (iv) Calculations. The average VO concentration (\bar{C}) on a mass-weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with subparagraphs (b)(3)(ii) and (b)(3)(iii) and the following equation:

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^n (Q_i \times C_i)$$

Where:

\bar{C} = Average VO concentration of the hazardous waste at the point of waste treatment on a mass-weighted basis, ppmw.

i = Individual waste determination "i" of the hazardous waste.

n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed 1 year).

Q_i = Mass quantity of hazardous waste stream represented by C_i , kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of waste determination "i" as determined in accordance with the requirements of subparagraph (b)(3)(iii) (i.e. the average of the four or more samples specified in clause (b)(3)(ii)(B)), ppmw.

- (v) Provided that the test method is appropriate for the waste as required under subparagraph (b)(3)(iii), compliance shall be determined based on the test method used by the owner or operator as recorded pursuant to section 11-265-1090(f)(1).
- (4) Procedure to determine the exit concentration limit (C_t) for a treated hazardous waste.
- (i) The point of waste origination for each hazardous waste treated by the process at the same time

- shall be identified.
- (ii) If a single hazardous waste stream is identified in subparagraph (b)(4)(i), then the exit concentration limit (C_t) shall be 500 ppmw.
 - (iii) If more than one hazardous waste stream is identified in subparagraph (b)(4)(i), then the average VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of subsection (a). The exit concentration limit (C_t) shall be calculated by using the results determined for each individual hazardous waste stream and the following equation:

$$C_t = \frac{\sum_{x=1}^m (Q_x \times \overline{C}_x) + \sum_{y=1}^n (Q_y \times 500 \text{ ppmw})}{\sum_{x=1}^m Q_x + \sum_{y=1}^n Q_y}$$

Where:

C_t = Exit concentration limit for treated hazardous waste, ppmw.

x = Individual hazardous waste stream "x" that has an average VO concentration less than 500 ppmw at the point of waste origination as determined in accordance with the requirements of subsection (a).

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination as determined in accordance with the requirements of subsection (a).

m = Total number of "x" hazardous waste streams treated by process.

n = Total number of "y" hazardous waste streams treated by process.

Q_x = Annual mass quantity of hazardous waste stream "x," kg/yr.

Q_y = Annual mass quantity of hazardous waste stream "y," kg/yr.

\overline{C}_x = Average VO concentration of hazardous waste stream "x" at the point of waste origination as determined in accordance with the requirements of subsection (a), ppmw.

- (5) Procedure to determine the organic reduction efficiency (R) for a treated hazardous waste.
 - (i) The organic reduction efficiency (R) for a treatment process shall be determined based on results for a minimum of three consecutive runs.

- (ii) All hazardous waste streams entering the treatment process and all hazardous waste streams exiting the treatment process shall be identified. The owner or operator shall prepare a sampling plan for measuring these streams that accurately reflects the retention time of the hazardous waste in the process.
- (iii) For each run, information shall be determined for each hazardous waste stream identified in subparagraph (b)(5)(ii) using the following procedures:
 - (A) The mass quantity of each hazardous waste stream entering the process (Q_b) and the mass quantity of each hazardous waste stream exiting the process (Q_a) shall be determined.
 - (B) The average VO concentration at the point of waste origination of each hazardous waste stream entering the process (\bar{C}_b) during the run shall be determined in accordance with the requirements of paragraph (a)(3). The average VO concentration at the point of waste treatment of each waste stream exiting the process (\bar{C}_a) during the run shall be determined in accordance with the requirements of paragraph (b)(3).
- (iv) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) shall be calculated by using the results determined in accordance with subparagraph (b)(5)(iii) and the following equations:

$$E_b = \frac{1}{10^6} \sum_{j=1}^m (Q_{bj} \times \bar{C}_{bj})$$

$$E_a = \frac{1}{10^6} \sum_{j=1}^m (Q_{aj} \times \bar{C}_{aj})$$

Where:

E_a = Waste volatile organic mass flow exiting process, kg/hr.
 E_b = Waste volatile organic mass flow entering process, kg/hr.
 m = Total number of runs (at least 3)
 j = Individual run "j"
 Q_b = Mass quantity of hazardous waste entering process during run "j," kg/hr.
 Q_a = Average mass quantity of hazardous waste exiting process during run "j," kg/hr.

\bar{C}_a = Average VO concentration of hazardous waste exiting process during run "j" as determined in accordance with the requirements of paragraph (b)(3), ppmw.

\bar{C}_b = Average VO concentration of hazardous waste entering process during run "j" as determined in accordance with the requirements of paragraph (a)(3), ppmw.

- (v) The organic reduction efficiency of the process shall be calculated by using the results determined in accordance with subparagraph (b)(5)(iv) and the following equation:

$$R = \frac{E_b - E_a}{E_b} \times 100\%$$

Where:

R = Organic reduction efficiency, percent.
 E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of subparagraph (b)(5)(iv), kg/hr.
 E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of subparagraph (b)(5)(iv), kg/hr.

- (6) Procedure to determine the organic biodegradation efficiency (R_{bio}) for a treated hazardous waste.
- (i) The fraction of organics biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR part 63, appendix C of 40 CFR chapter I.
 - (ii) The R_{bio} shall be calculated by using the following equation:

$$R_{bio} = F_{bio} \times 100\%$$

Where:

R_{bio} = Organic biodegradation efficiency, percent.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of subparagraph (b)(6)(i).

- (7) Procedure to determine the required organic mass removal rate (RMR) for a treated hazardous waste.
 - (i) All of the hazardous waste streams entering the treatment process shall be identified.
 - (ii) The average VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of subsection (a).
 - (iii) For each individual hazardous waste stream that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination, the average volumetric flow rate and the density of the hazardous waste stream at the point of waste origination shall be determined.
 - (iv) The RMR shall be calculated by using the average VO concentration, average volumetric flow rate, and density determined for each individual hazardous waste stream, and the following equation:

$$RMR = \sum_{y=1}^n \left[V_y \times k_y \times \frac{(\bar{C}_y - 500 \text{ ppmw})}{10^6} \right]$$

Where:

RMR = Required organic mass removal rate, kg/hr.

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination as determined in accordance with the requirements of subsection (a).

n = Total number of "y" hazardous waste streams treated by process.

V_y = Average volumetric flow rate of hazardous waste stream "y" at the point of waste origination, m³/hr.

k_y = Density of hazardous waste stream "y," kg/m³

\bar{C}_y = Average VO concentration of hazardous waste stream "y" at the point of waste origination as determined in accordance with the requirements of subsection (a), ppmw.

- (8) Procedure to determine the actual organic mass removal rate (MR) for a treated hazardous waste.
- (i) The MR shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.
 - (ii) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) shall be determined in accordance with the requirements of subparagraph (b)(5)(iv).
 - (iii) The MR shall be calculated by using the mass flow rate determined in accordance with the requirements of subparagraph (b)(8)(ii) and the following equation:

$$MR = E_b - E_a$$

Where:

MR = Actual organic mass removal rate, kg/hr.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of subparagraph (b)(5)(iv), kg/hr.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of subparagraph (b)(5)(iv), kg/hr.

- (9) Procedure to determine the actual organic mass biodegradation rate (MR_{bio}) for a treated hazardous waste.
- (i) The MR_{bio} shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.
 - (ii) The waste organic mass flow entering the process (E_b) shall be determined in accordance with the requirements of subparagraph (b)(5)(iv).
 - (iii) The fraction of organic biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR part 63, appendix C of 40 CFR chapter I.
 - (iv) The MR_{bio} shall be calculated by using the mass flow rates and fraction of organic biodegraded determined in accordance with the requirements of subparagraphs (b)(9)(ii) and (b)(9)(iii), respectively, and the following equation:

$$MR_{bio} = E_b \times F_{bio}$$

Where:

MR_{bio} = Actual organic mass biodegradation rate, kg/hr.

E_b = Waste organic mass flow entering process as determined in accordance with the requirements of subparagraph (b)(5)(iv), kg/hr.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of subparagraph (b)(9)(iii).

(c) Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.

- (1) An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in a tank using Tank Level 1 controls in accordance with the standards specified in section 11-265-1085(c).
- (2) An owner or operator shall use either direct measurement as specified in paragraph (c)(3) or knowledge of the waste as specified by paragraph (c)(4) to determine the maximum organic vapor pressure which is representative of the hazardous waste composition stored or treated in the tank.
- (3) Direct measurement to determine the maximum organic vapor pressure of a hazardous waste.
 - (i) Sampling. A sufficient number of samples shall be collected to be representative of the waste contained in the tank. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste are collected such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846, (incorporated by reference--refer to section 11-260-11(a)), or in Method 25D in 40 CFR part 60, appendix A.
 - (ii) Analysis. Any appropriate one of the following methods may be used to analyze the samples and compute the maximum organic vapor pressure of the hazardous waste:
 - (A) Method 25E in 40 CFR part 60 appendix A;
 - (B) Methods described in American Petroleum Institute Publication 2517, Third Edition, February 1989, "Evaporative Loss from

- External Floating-Roof Tanks," (incorporated by reference--refer to section 11-260-11);
- (C) Methods obtained from standard reference texts;
 - (D) ASTM Method 2879-92 (incorporated by reference--refer to section 11-260-11); and
 - (E) Any other method approved by the director.
- (4) Use of knowledge to determine the maximum organic vapor pressure of the hazardous waste. Documentation shall be prepared and recorded that presents the information used as the basis for the owner's or operator's knowledge that the maximum organic vapor pressure of the hazardous waste is less than the maximum vapor pressure limit listed in section 11-265-1085(b)(1)(i) for the applicable tank design capacity category. An example of information that may be used is documentation that the hazardous waste is generated by a process for which at other locations it previously has been determined by direct measurement that the waste maximum organic vapor pressure is less than the maximum vapor pressure limit for the appropriate tank design capacity category.
- (d) Procedure for determining no detectable organic emissions for the purpose of complying with this subchapter:
- (1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: The interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure relief valve.
 - (2) The test shall be performed when the unit contains a hazardous waste having an organic concentration representative of the range of concentrations for the hazardous waste expected to be managed in the unit. During the test, the cover and closure devices shall be secured in the closed position.
 - (3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the hazardous waste placed in the waste management unit, not for each individual organic constituent.
 - (4) The detection instrument shall be calibrated before use

- on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.
- (5) Calibration gases shall be as follows:
 - (i) Zero air (less than 10 ppmv hydrocarbon in air), and
 - (ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than 10,000 ppmv methane or n-hexane.
 - (6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60, appendix A.
 - (7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21 of 40 CFR part 60, appendix A. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.
 - (8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv except when monitoring a seal around a rotating shaft that passes through a cover opening, in which case the comparison shall be as specified in paragraph (d)(9). If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.
 - (9) For the seals around a rotating shaft that passes through a cover opening, the arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 10,000 ppmw. If the difference is less than 10,000 ppmw, then the potential leak interface is determined to operate with no detectable organic emissions. [Eff 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1084)

§11-265-1085 Standards: Tanks. (a) The provisions of this section apply to the control of air pollutant emissions from tanks for which section 11-265-1083(b) references the use of this section for such air emission control.

(b) The owner or operator shall control air pollutant emissions from each tank subject to this section in accordance with the following requirements, as applicable:

- (1) For a tank that manages hazardous waste that meets all of the conditions specified in subparagraphs (b)(1)(i) through (b)(1)(iii), the owner or operator shall control air pollutant emissions from the tank in accordance with the Tank Level 1 controls specified in subsection (c) or the Tank Level 2 controls specified in subsection (d).
 - (i) The hazardous waste in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:
 - (A) For a tank design capacity equal to or greater than 151 m³, the maximum organic vapor pressure limit for the tank is 5.2 kPa.
 - (B) For a tank design capacity equal to or greater than 75 m³ less than 151 m³, the maximum organic vapor pressure limit for the tank is 27.6 kPa.
 - (C) For a tank design capacity less than 75 m³, the maximum organic vapor pressure limit for the tank is 76.6 kPa.
 - (ii) The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined for the purpose of complying with subparagraph (b)(1)(i).
 - (iii) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in section 11-265-1081.
- (2) For a tank that manages hazardous waste that does not meet all of the conditions specified in subparagraphs (b)(1)(i) through (b)(1)(iii), the owner or operator shall control air pollutant emissions from the tank by using Tank Level 2 controls in accordance with the requirements of subsection (d). Examples of tanks required to use Tank Level 2 controls include: A tank used for a waste stabilization process; and a tank for which the hazardous waste in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category as specified in subparagraph (b)(1)(i).

(c) Owners and operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet the requirements specified in paragraphs (c)(1) through (c)(4):

- (1) The owner or operator shall determine the maximum

organic vapor pressure for a hazardous waste to be managed in the tank using Tank Level 1 controls before the first time the hazardous waste is placed in the tank. The maximum organic vapor pressure shall be determined using the procedures specified in section 11-265-1084(c). Thereafter, the owner or operator shall perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank design capacity category specified in subparagraph (b)(1)(i), as applicable to the tank.

- (2) The tank shall be equipped with a fixed roof designed to meet the following specifications:
 - (i) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).
 - (ii) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.
 - (iii) Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be either:
 - (A) Equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or
 - (B) Connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and shall be operating whenever hazardous waste is managed in the tank, except as provided for in clauses (c)(2)(iii)(B)(1) and (2).
 - (1) During periods it is necessary to provide access to the tank for performing the activities of clause (c)(2)(iii)(B)(2), venting of the vapor

headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed, and removal of the fixed roof is allowed. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device.

- (2) During periods of routine inspection, maintenance, or other activities needed for normal operations, and for the removal of accumulated sludge or other residues from the bottom of the tank.
- (iv) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the hazardous waste or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.
- (3) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:
 - (i) Opening of closure devices or removal of the fixed roof is allowed at the following times:
 - (A) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.
 - (B) To remove accumulated sludge or other residues from the bottom of tank.
 - (ii) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of

pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

- (iii) Opening of a safety device, as defined in section 11-265-1081, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (4) The owner or operator shall inspect the air emission control equipment in accordance with the following requirements.
 - (i) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.
 - (ii) The owner or operator shall perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions provided for in subsection (1).
 - (iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection (k).
 - (iv) The owner or operator shall maintain a record of

the inspection in accordance with the requirements specified in section 11-265-1090(b).

(d) Owners and operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following tanks:

- (1) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in subsection (e);
- (2) A tank equipped with an external floating roof in accordance with the requirements specified in subsection (f);
- (3) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in subsection (g);
- (4) A pressure tank designed and operated in accordance with the requirements specified in subsection (h); or
- (5) A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in subsection (i).

(e) The owner or operator who controls air pollutant emissions from a tank using a fixed-roof with an internal floating roof shall meet the requirements specified in paragraphs (e)(1) through (e)(3).

- (1) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:

- (i) The internal floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.
- (ii) The internal floating roof shall be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:
 - (A) A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in section 11-265-1081; or
 - (B) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.
- (iii) The internal floating roof shall meet the following specifications:
 - (A) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.
 - (B) Each opening in the internal floating roof shall be equipped with a gasketed cover or a

- gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.
 - (C) Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least 90 percent of the opening.
 - (D) Each automatic bleeder vent and rim space vent shall be gasketed.
 - (E) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.
 - (F) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.
- (2) The owner or operator shall operate the tank in accordance with the following requirements:
 - (i) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.
 - (ii) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.
 - (iii) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof shall be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.
- (3) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified as follows:
 - (i) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: The internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the

hazardous waste surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

- (ii) The owner or operator shall inspect the internal floating roof components as follows except as provided in subparagraph (e)(3)(iii):
 - (A) Visually inspect the internal floating roof components through openings on the fixed-roof (e.g., manholes and roof hatches) at least once every 12 months after initial fill, and
 - (B) Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 10 years.
- (iii) As an alternative to performing the inspections specified in subparagraph (e)(3)(ii) for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 5 years.
- (iv) Prior to each inspection required by subparagraph (e)(3)(ii) or (e)(3)(iii), the owner or operator shall notify the director in advance of each inspection to provide the director with the opportunity to have an observer present during the inspection. The owner or operator shall notify the director of the date and location of the inspection as follows:
 - (A) Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the director at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in clause (e)(3)(iv)(B).
 - (B) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the director as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and

- immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the director at least 7 calendar days before refilling the tank.
- (v) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection (k).
 - (vi) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in section 11-265-1090(b).
- (4) Safety devices, as defined in section 11-265-1081, may be installed and operated as necessary on any tank complying with the requirements of subsection (e).
- (f) The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet the requirements specified in paragraphs (f)(1) through (f)(3).
- (1) The owner or operator shall design the external floating roof in accordance with the following requirements:
 - (i) The external floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.
 - (ii) The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.
 - (A) The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in section 11-265-1081. The total area of the gaps between the tank wall and the primary seal shall not exceed 212 square centimeters (cm²) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, the metallic shoe seal shall be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters above the liquid surface.
 - (B) The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal shall not

exceed 21.2 square centimeters (cm²) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).

- (iii) The external floating roof shall meet the following specifications:
 - (A) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface.
 - (B) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid.
 - (C) Each access hatch and each gauge float well shall be equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position.
 - (D) Each automatic bleeder vent and each rim space vent shall be equipped with a gasket.
 - (E) Each roof drain that empties into the liquid managed in the tank shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.
 - (F) Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.
 - (G) Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.
 - (H) Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.
 - (I) Each gauge hatch and each sample well shall be equipped with a gasketed cover.
- (2) The owner or operator shall operate the tank in accordance with the following requirements:
 - (i) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.
 - (ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be secured and maintained in a closed position at all times except when the closure device must be open for access.
 - (iii) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

- (iv) Automatic bleeder vents shall be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.
 - (v) Rim space vents shall be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.
 - (vi) The cap on the end of each unslotted guide pole shall be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank.
 - (vii) The cover on each gauge hatch or sample well shall be secured in the closed position at all times except when the hatch or well must be opened for access.
 - (viii) Both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.
- (3) The owner or operator shall inspect the external floating roof in accordance with the procedures specified as follows:
- (i) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:
 - (A) The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every 5 years.
 - (B) The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year.
 - (C) If a tank ceases to hold hazardous waste for a period of 1 year or more, subsequent introduction of hazardous waste into the tank shall be considered an initial operation for the purposes of clauses (f)(3)(i)(A) and (f)(3)(i)(B).
 - (D) The owner or operator shall determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure:
 - (1) The seal gap measurements shall be

- performed at one or more floating roof levels when the roof is floating off the roof supports.
- (2) Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.
 - (3) For a seal gap measured under paragraph (f)(3), the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.
 - (4) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in subparagraph (f)(1)(ii).
- (E) In the event that the seal gap measurements do not conform to the specifications in subparagraph (f)(1)(ii), the owner or operator shall repair the defect in accordance with the requirements of subsection (k).
 - (F) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in section 11-265-1090(b).
- (ii) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:
 - (A) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: Holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal

- detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.
- (B) The owner or operator shall perform an initial inspection of the external floating roof and its closure devices on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in subsection (l) .
 - (C) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection (k).
 - (D) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in section 11-265-1090(b).
- (iii) Prior to each inspection required by subparagraph (f)(3)(i) or (f)(3)(ii), the owner or operator shall notify the director in advance of each inspection to provide the director with the opportunity to have an observer present during the inspection. The owner or operator shall notify the director of the date and location of the inspection as follows:
- (A) Prior to each inspection to measure external floating roof seal gaps as required under subparagraph (f)(3)(i), written notification shall be prepared and sent by the owner or operator so that it is received by the director at least 30 calendar days before the date the measurements are scheduled to be performed.
 - (B) Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the director at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in clause (f)(3)(iii)(C).
 - (C) When a visual inspection is not planned and the owner or operator could not have known

about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the director as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the director at least 7 calendar days before refilling the tank.

- (4) Safety devices, as defined in section 11-265-1081, may be installed and operated as necessary on any tank complying with the requirements of subsection (f).

(g) The owner or operator who controls air pollutant emissions from a tank by venting the tank to a control device shall meet the requirements specified in paragraphs (g)(1) through (g)(3).

- (1) The tank shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

- (i) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the tank.
 - (ii) Each opening in the fixed roof not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions.
 - (iii) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and

- designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.
- (iv) The closed-vent system and control device shall be designed and operated in accordance with the requirements of section 11-265-1088.
- (2) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:
- (i) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:
 - (A) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.
 - (B) To remove accumulated sludge or other residues from the bottom of a tank.
 - (ii) Opening of a safety device, as defined in section 11-265-1081, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (3) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:
- (i) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.
 - (ii) The closed-vent system and control device shall be inspected and monitored by the owner or operator

- in accordance with the procedures specified in section 11-265-1088.
- (iii) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in subsection (l).
 - (iv) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection (k).
 - (v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in section 11-265-1090(b).
- (h) The owner or operator who controls air pollutant emissions by using a pressure tank shall meet the following requirements.
- (1) The tank shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.
 - (2) All tank openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in section 11-265-1084(d).
 - (3) Whenever a hazardous waste is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere except in the event that a safety device, as defined in section 11-265-1081, is required to open to avoid an unsafe condition.
- (i) The owner or operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in paragraphs (i)(1) through (i)(4).
- (1) The tank shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total

Enclosure" initially when the enclosure is first installed and, thereafter, annually.

- (2) The enclosure shall be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in section 11-265-1088.
- (3) Safety devices, as defined in section 11-265-1081, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of paragraphs (i)(1) and (i)(2).
- (4) The owner or operator shall inspect and monitor the closed-vent system and control device as specified in section 11-265-1088.
- (j) The owner or operator shall transfer hazardous waste to a tank subject to this section in accordance with the following requirements:
 - (1) Transfer of hazardous waste, except as provided in paragraph (j)(2), to the tank from another tank subject to this section or from a surface impoundment subject to section 11-265-1086 shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR--National Emission Standards for Individual Drain Systems.
 - (2) The requirements of paragraph (j)(1) do not apply when transferring a hazardous waste to the tank under any of the following conditions:
 - (i) The hazardous waste meets the average VO concentration conditions specified in section 11-265-1083(c)(1) at the point of waste origination.
 - (ii) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in section 11-265-1083(c)(2).
 - (iii) The hazardous waste meets the requirements of section 11-265-1083(c)(4).
- (k) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of paragraph (c)(4), (e)(3), (f)(3), or (g)(3) as follows:
 - (1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection, and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (k)(2).
 - (2) Repair of a defect may be delayed beyond 45 calendar

days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(1) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subchapter, subsequent inspection and monitoring may be performed at intervals longer than 1 year under the following special conditions:

(1) In the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions, then the owner or operator may designate a cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:

- (i) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.
- (ii) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable section of this subchapter, as frequently as practicable during those times when a worker can safely access the cover.

(2) In the case when a tank is buried partially or entirely underground, an owner or operator is required to inspect and monitor, as required by the applicable provisions of this section, only those portions of the tank cover and those connections to the tank (e.g., fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface. [Eff 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1085)

§11-265-1086 Standards: surface impoundments. (a) The provisions of this section apply to the control of air pollutant emissions from surface impoundments for which section 11-265-1083(b) references the use of this section for such air emission control.

(b) The owner or operator shall control air pollutant emissions from the surface impoundment by installing and operating either of the following:

(1) A floating membrane cover in accordance with the

- provisions specified in subsection (c); or
- (2) A cover that is vented through a closed-vent system to a control device in accordance with the requirements specified in subsection (d).
- (c) The owner or operator who controls air pollutant emissions from a surface impoundment using a floating membrane cover shall meet the requirements specified in paragraphs (c)(1) through (c)(3).
- (1) The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:
- (i) The floating membrane cover shall be designed to float on the liquid surface during normal operations and form a continuous barrier over the entire surface area of the liquid.
 - (ii) The cover shall be fabricated from a synthetic membrane material that is either:
 - (A) High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm); or
 - (B) A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in clause (c)(1)(ii)(A) and chemical and physical properties that maintain the material integrity for the intended service life of the material.
 - (iii) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.
 - (iv) Except as provided for in subparagraph (c)(1)(v), each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.
 - (v) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.
 - (vi) The closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent

practical, and will maintain the integrity of the closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

- (2) Whenever a hazardous waste is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position except as follows:
 - (i) Opening of closure devices or removal of the cover is allowed at the following times:
 - (A) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.
 - (B) To remove accumulated sludge or other residues from the bottom of surface impoundment.
 - (ii) Opening of a safety device, as defined in section 11-265-1081, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (3) The owner or operator shall inspect the floating membrane cover in accordance with the following procedures:
 - (i) The floating membrane cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

- (ii) The owner or operator shall perform an initial inspection of the floating membrane cover and its closure devices on or before the date that the surface impoundment becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in subsection (g).
 - (iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection (f).
 - (iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in section 11-265-1090(c).
- (d) The owner or operator who controls air pollutant emissions from a surface impoundment using a cover vented to a control device shall meet the requirements specified in paragraphs (d)(1) through (d)(3).
- (1) The surface impoundment shall be covered by a cover and vented directly through a closed-vent system to a control device in accordance with the following requirements:
 - (i) The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the surface impoundment.
 - (ii) Each opening in the cover not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions using the procedure specified in section 11-265-1084(d).
 - (iii) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the cover and closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and

- designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.
- (iv) The closed-vent system and control device shall be designed and operated in accordance with the requirements of section 11-265-1088.
- (2) Whenever a hazardous waste is in the surface impoundment, the cover shall be installed with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:
- (i) Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:
 - (A) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the surface impoundment.
 - (B) To remove accumulated sludge or other residues from the bottom of the surface impoundment.
 - (ii) Opening of a safety device, as defined in section 11-265-1081, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (3) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:
- (i) The surface impoundment cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other

closure devices.

- (ii) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in section 11-265-1088.
- (iii) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the surface impoundment becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in subsection (g).
- (iv) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection (f).
- (v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in section 11-265-1090(c).

(e) The owner or operator shall transfer hazardous waste to a surface impoundment subject to this section in accordance with the following requirements:

- (1) Transfer of hazardous waste, except as provided in paragraph (e)(2), to the surface impoundment from another surface impoundment subject to this section or from a tank subject to section 11-265-1085 shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR--National Emission Standards for Individual Drain Systems.
- (2) The requirements of paragraph (e)(1) do not apply when transferring a hazardous waste to the surface impoundment under either of the following conditions:
 - (i) The hazardous waste meets the average VO concentration conditions specified in section 11-265-1083(c)(1) at the point of waste origination.
 - (ii) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in section 11-265-1083(c)(2).
 - (iii) The hazardous waste meets the requirements of section 11-265-1083(c)(4).

(f) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of paragraph (c)(3) or (d)(3) as follows:

- (1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection, and repair shall be completed as soon as possible but no later than 45 calendar days after

- detection except as provided in paragraph (f)(2).
- (2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative capacity is available at the site to accept the hazardous waste normally managed in the surface impoundment. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.
 - (g) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subchapter, subsequent inspection and monitoring may be performed at intervals longer than 1 year in the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions. In this case, the owner or operator may designate the cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:
 - (1) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.
 - (2) Develop and implement a written plan and schedule to inspect and monitor the cover using the procedures specified in the applicable section of this subchapter as frequently as practicable during those times when a worker can safely access the cover. [Eff 3/13/99; comp 342J-34, 342J-35] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1086)

§11-265-1087 Standards: Containers. (a) The provisions of this section apply to the control of air pollutant emissions from containers for which section 11-265-1083(b) references the use of this section for such air emission control.

(b) General requirements.

- (1) The owner or operator shall control air pollutant emissions from each container subject to this section in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in paragraph (b)(2) apply to the container.
 - (i) For a container having a design capacity greater than 0.1 m³ and less than or equal to 0.46 m³ the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in subsection (c).
 - (ii) For a container having a design capacity greater

- than 0.46 m³ that is not in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in subsection (c).
- (iii) For a container having a design capacity greater than 0.46 m³ that is in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 2 standards specified in subsection (d).
- (2) When a container having a design capacity greater than 0.1 m³ is used for treatment of a hazardous waste by a waste stabilization process, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 3 standards specified in subsection (e) at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.
- (c) Container Level 1 standards.
 - (1) A container using Container Level 1 controls is one of the following:
 - (i) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in subsection (f).
 - (ii) A container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a "portable tank" or bulk cargo container equipped with a screw-type cap).
 - (iii) An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.
 - (2) A container used to meet the requirements of subparagraph (c)(1)(ii) or (c)(1)(iii) shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste

to the atmosphere and to maintain the equipment integrity for as long as it is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability, the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight; and the operating practices for which the container is intended to be used.

- (3) Whenever a hazardous waste is in a container using Container Level 1 controls, the owner or operator shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:

(i) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(A) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(B) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(ii) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(A) For the purpose of meeting the requirements of this section, an empty container as defined in section 11-261-7(b) may be open to the atmosphere at any time (i.e., covers and

closure devices are not required to be secured in the closed position on an empty container).

- (B) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in section 11-261-7(b), the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.
- (iii) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.
- (iv) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the container internal pressure in accordance with the design specifications of the container. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous

materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

- (v) Opening of a safety device, as defined in section 11-265-1081, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (4) The owner or operator of containers using Container Level 1 controls shall inspect the containers and their covers and closure devices as follows:
 - (i) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in section 11-261-7(b)), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the subchapter CC container standards). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in the appendix to chapter 11-262 (EPA Forms 8700-22 and 8700-22A), as required under subchapter E, at section 11-265-71. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subparagraph (c)(4)(iii).
 - (ii) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or

- operator shall repair the defect in accordance with the requirements of subparagraph (c)(4)(iii).
- (iii) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.
- (5) The owner or operator shall maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m³ or greater, which do not meet applicable DOT regulations as specified in subsection (f), are not managing hazardous waste in light material service.
- (d) Container Level 2 standards.
- (1) A container using Container Level 2 controls is one of the following:
 - (i) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in subsection (f).
 - (ii) A container that operates with no detectable organic emissions as defined in section 11-265-1081 and determined in accordance with the procedure specified in subsection (g).
 - (iii) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using 40 CFR part 60, appendix A, Method 27 in accordance with the procedure specified in subsection (h).
- (2) Transfer of hazardous waste in or out of a container using Container Level 2 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive or other hazardous materials. Examples of container loading procedures that DOH considers to meet the requirements of this paragraph include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the

hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

- (3) Whenever a hazardous waste is in a container using Container Level 2 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:
- (i) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:
 - (A) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.
 - (B) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.
 - (ii) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:
 - (A) For the purpose of meeting the requirements of this section, an empty container as defined in section 11-261-7(b) may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).
 - (B) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in section 11-261-7(b), the owner or operator shall promptly secure the closure

devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

- (iii) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.
- (iv) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emission when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.
- (v) Opening of a safety device, as defined in section 11-265-1081, is allowed at any time conditions

require doing so to avoid an unsafe condition.

- (4) The owner or operator of containers using Container Level 2 controls shall inspect the containers and their covers and closure devices as follows:

- (i) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in section 11-261-7(b)), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the subchapter CC container standards). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in the appendix to chapter 11-262 (EPA Forms 8700-22 and 8700-22A), as required under subchapter E, at section 11-265-71. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subparagraph (d)(4)(iii).
- (ii) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subparagraph (d)(4)(iii).
- (iii) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5

calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

- (e) Container Level 3 standards.
- (1) A container using Container Level 3 controls is one of the following:
 - (i) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of subparagraph (e)(2)(ii).
 - (ii) A container that is vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of subparagraphs (e)(2)(i) and (e)(2)(ii).
- (2) The owner or operator shall meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:
 - (i) The container enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.
 - (ii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of section 11-265-1088.
- (3) Safety devices, as defined in section 11-265-1081, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of paragraph (e)(1).
- (4) Owners and operators using Container Level 3 controls in accordance with the provisions of this subchapter shall inspect and monitor the closed-vent systems and control devices as specified in section 11-265-1088.
- (5) Owners and operators that use Container Level 3 controls in accordance with the provisions of this

subchapter shall prepare and maintain the records specified in section 11-265-1090(d).

(f) For the purpose of compliance with subparagraph (c)(1)(i) or (d)(1)(i), containers shall be used that meet the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as follows:

- (1) The container meets the applicable requirements specified in 49 CFR part 178--Specifications for Packaging or 49 CFR part 179--Specifications for Tank Cars.
- (2) Hazardous waste is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107, subpart B--Exemptions; 49 CFR part 172--Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173--Shippers--General Requirements for Shipments and Packages; and 49 CFR part 180--Continuing Qualification and Maintenance of Packagings.
- (3) For the purpose of complying with this subchapter, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in paragraph (f)(4).
- (4) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subchapter, an owner or operator may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).

(g) To determine compliance with the no detectable organic emissions requirements of subparagraph (d)(1)(ii), the procedure specified in section 11-265-1084(d) shall be used.

- (1) Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, shall be checked. Potential leak interfaces that are associated with containers include, but are not limited to: The interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.
 - (2) The test shall be performed when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous wastes expected to be managed in this type of container. During the test, the container cover and closure devices shall be secured in the closed position.
- (h) Procedure for determining a container to be vapor-tight

using Method 27 of 40 CFR part 60, appendix A for the purpose of complying with subparagraph (d)(1)(iii).

- (1) The test shall be performed in accordance with Method 27 of 40 CFR part 60, appendix A.
- (2) A pressure measurement device shall be used that has a precision of ± 2.5 mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.
- (3) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals, then the container is determined to be vapor-tight. [Eff 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1087)

§11-265-1088 Standards: Closed-vent systems and control devices. (a) This section applies to each closed-vent system and control device installed and operated by the owner or operator to control air emissions in accordance with standards of this subchapter.

(b) The closed-vent system shall meet the following requirements:

- (1) The closed-vent system shall route the gases, vapors, and fumes emitted from the hazardous waste in the waste management unit to a control device that meets the requirements specified in subsection (c).
- (2) The closed-vent system shall be designed and operated in accordance with the requirements specified in section 11-265-1033(j).
- (3) In the case when the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device shall be equipped with either a flow indicator as specified in subparagraph (b)(3)(i) or a seal or locking device as specified in subparagraph (b)(3)(ii). For the purpose of complying with this paragraph, low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring-loaded pressure relief valves, and other fittings used for safety purposes are not considered to be bypass devices.
 - (i) If a flow indicator is used to comply with paragraph (b)(3), the indicator shall be installed at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet. For this paragraph, a flow indicator means a device which indicates the presence of

- either gas or vapor flow in the bypass line.
 - (ii) If a seal or locking device is used to comply with paragraph (b)(3), the device shall be placed on the mechanism by which the bypass device position is controlled (e.g., valve handle, damper lever) when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock. Examples of such devices include, but are not limited to, a car-seal or a lock-and-key configuration valve. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.
- (4) The closed-vent system shall be inspected and monitored by the owner or operator in accordance with the procedure specified in section 11-265-1033(k).
- (c) The control device shall meet the following requirements:
 - (1) The control device shall be one of the following devices:
 - (i) A control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent by weight;
 - (ii) An enclosed combustion device designed and operated in accordance with the requirements of section 11-265-1033(c); or
 - (iii) A flare designed and operated in accordance with the requirements of section 11-265-1033(d).
 - (2) The owner or operator who elects to use a closed-vent system and control device to comply with the requirements of this section shall comply with the requirements specified in subparagraphs (c)(2)(i) through (c)(2)(vi).
 - (i) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of subparagraph (c)(1)(i), (c)(1)(ii), or (c)(1)(iii), as applicable, shall not exceed 240 hours per year.
 - (ii) The specifications and requirements in subparagraphs (c)(1)(i), (c)(1)(ii), and (c)(1)(iii) for control devices do not apply during periods of planned routine maintenance.
 - (iii) The specifications and requirements in subparagraph (c)(1)(i), (c)(1)(ii), and (c)(1)(iii) for control devices do not apply during a control device system malfunction.
 - (iv) The owner or operator shall demonstrate compliance with the requirements of subparagraph (c)(2)(i)

- (i.e., planned routine maintenance of a control device, during which the control device does not meet the specifications of subparagraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii), as applicable, shall not exceed 240 hours per year) by recording the information specified in section 11-265-1090(e)(1)(v).
- (v) The owner or operator shall correct control device system malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of air pollutants.
 - (vi) The owner or operator shall operate the closed-vent system such that gases, vapors, and/or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction (i.e., periods when the control device is not operating or not operating normally) except in cases when it is necessary to vent the gases, vapors, or fumes to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.
- (3) The owner or operator using a carbon adsorption system to comply with paragraph (c)(1) shall operate and maintain the control device in accordance with the following requirements:
- (i) Following the initial startup of the control device, all activated carbon in the control device shall be replaced with fresh carbon on a regular basis in accordance with the requirements of section 11-265-1033(g) or 11-265-1033(h).
 - (ii) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of section 11-265-1033(m), regardless of the average volatile organic concentration of the carbon.
- (4) An owner or operator using a control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system to comply with paragraph (c)(1) shall operate and maintain the control device in accordance with the requirements of section 11-265-1033(i).
- (5) The owner or operator shall demonstrate that a control device achieves the performance requirements of paragraph (c)(1) as follows:
- (i) An owner or operator shall demonstrate using either a performance test as specified in subparagraph (c)(5)(iii) or a design analysis as specified in subparagraph (c)(5)(iv) the performance of each control device except for the following:

- (A) A flare;
 - (B) A boiler or process heater with a design heat input capacity of 44 megawatts or greater;
 - (C) A boiler or process heater into which the vent stream is introduced with the primary fuel;
 - (D) A boiler or industrial furnace burning hazardous waste for which the owner or operator has: (1) Been issued a final permit under 40 CFR part 270 and has designed and operates the unit in accordance with the requirements of chapter 11-266, subchapter H; or (2) Been issued a State hazardous waste management permit under chapter 11-270 and has designed and operates the unit in accordance with the requirements of chapter 11-266, subchapter H; or
 - (E) A boiler or industrial furnace burning hazardous waste for which the owner or operator has designed and operates in accordance with the interim status requirements of chapter 11-266, subchapter H.
- (ii) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in section 11-265-1033(e).
 - (iii) For a performance test conducted to meet the requirements of subparagraph (c)(5)(i), the owner or operator shall use the test methods and procedures specified in sections 11-265-1034(c)(1) through (c)(4).
 - (iv) For a design analysis conducted to meet the requirements of subparagraph (c)(5)(i), the design analysis shall meet the requirements specified in section 11-265-1035(b)(4)(iii).
 - (v) The owner or operator shall demonstrate that a carbon adsorption system achieves the performance requirements of paragraph (c)(1) based on the total quantity of organics vented to the atmosphere from all carbon adsorption system equipment that is used for organic adsorption, organic desorption or carbon regeneration, organic recovery, and carbon disposal.
- (6) If the owner or operator and the director do not agree on a demonstration of control device performance using a design analysis then the disagreement shall be resolved using the results of a performance test performed by the owner or operator in accordance with the requirements of subparagraph (c)(5)(iii). The director may choose to have an authorized representative observe the performance test.

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- (7) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in sections 11-265-1033(f)(2) and 11-265-1033(k). The readings from each monitoring device required by section 11-265-1033(f)(2) shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures shall be immediately implemented to ensure the control device is operated in compliance with the requirements of this section. [Eff 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1088)

§11-265-1089 Inspection and monitoring requirements. (a) The owner or operator shall inspect and monitor air emission control equipment used to comply with this subchapter in accordance with the applicable requirements specified in sections 11-265-1085 through 11-265-1088.

(b) The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by subsection (a). The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under section 11-265-15. [Eff 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1089)

§11-265-1090 Recordkeeping requirements. (a) Each owner or operator of a facility subject to requirements in this subchapter shall record and maintain the information specified in subsections (b) through (j), as applicable to the facility. Except for air emission control equipment design documentation and information required by subsections (i) and (j), records required by this section shall be maintained in the operating record for a minimum of 3 years. Air emission control equipment design documentation shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Information required by subsections (i) and (j) shall be maintained in the operating record for as long as the waste management unit is not using air emission controls specified in sections 11-265-1085 through 11-265-1088 in accordance with the conditions specified in section 11-265-1080(d) or section 11-265-1080(b)(7), respectively.

(b) The owner or operator of a tank using air emission controls in accordance with the requirements of section 11-265-1085 shall prepare and maintain records for the tank that include the following information:

- (1) For each tank using air emission controls in accordance with the requirements of section 11-265-1085, the owner

or operator shall record:

- (i) A tank identification number (or other unique identification description as selected by the owner or operator).
- (ii) A record for each inspection required by section 11-265-1085 that includes the following information:

- (A) Date inspection was conducted.
- (B) For each defect detected during the inspection: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of section 11-265-1085, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

- (2) In addition to the information required by paragraph (b)(1), the owner or operator shall record the following information, as applicable to the tank:

- (i) The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in section 11-265-1085(c) shall prepare and maintain records for each determination for the maximum organic vapor pressure of the hazardous waste in the tank performed in accordance with the requirements of section 11-265-1085(c). The records shall include the date and time the samples were collected, the analysis method used, and the analysis results.
- (ii) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in section 11-265-1085(e) shall prepare and maintain documentation describing the floating roof design.
- (iii) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in section 11-265-1085(f) shall prepare and maintain the following records:
 - (A) Documentation describing the floating roof design and the dimensions of the tank.
 - (B) Records for each seal gap inspection required by section 11-265-1085(f)(3) describing the results of the seal gap measurements. The records shall include the date that the measurements were performed, the raw data obtained for the measurements, and the calculations of the total gap surface area.

In the event that the seal gap measurements do not conform to the specifications in section 11-265-1085(f)(1), the records shall include a description of the repairs that were made, the date the repairs were made, and the date the tank was emptied, if necessary.

- (iv) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in section 11-265-1085(i) shall prepare and maintain the following records:

- (A) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T-Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B.

- (B) Records required for the closed-vent system and control device in accordance with the requirements of subsection (e).

(c) The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of section 11-265-1086 shall prepare and maintain records for the surface impoundment that include the following information:

- (1) A surface impoundment identification number (or other unique identification description as selected by the owner or operator).
- (2) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in section 11-265-1086(c).
- (3) A record for each inspection required by section 11-265-1086 that includes the following information:
 - (i) Date inspection was conducted.
 - (ii) For each defect detected during the inspection the following information: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of section 11-265-1086(f), the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.
- (4) For a surface impoundment equipped with a cover and

vented through a closed-vent system to a control device, the owner or operator shall prepare and maintain the records specified in subsection (e).

(d) The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of section 11-265-1087 shall prepare and maintain records that include the following information:

- (1) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T-Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B.
- (2) Records required for the closed-vent system and control device in accordance with the requirements of subsection (e).

(e) The owner or operator using a closed-vent system and control device in accordance with the requirements of section 11-265-1088 shall prepare and maintain records that include the following information:

- (1) Documentation for the closed-vent system and control device that includes:
 - (i) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in subparagraph (e)(1)(ii) or by performance tests as specified in subparagraph (e)(1)(iii) when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.
 - (ii) If a design analysis is used, then design documentation as specified in section 11-265-1035(b)(4). The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with section 11-265-1035(b)(4)(iii) and certification by the owner or operator that the control equipment meets the applicable specifications.
 - (iii) If performance tests are used, then a performance test plan as specified in section 11-265-1035(b)(3) and all test results.
 - (iv) Information as required by sections 11-265-1035(c)(1) and 11-265-1035(c)(2), as applicable.
 - (v) An owner or operator shall record, on a semiannual basis, the information specified in clauses (e)(1)(v)(A) and (e)(1)(v)(B) for those planned

routine maintenance operations that would require the control device not to meet the requirements of section 11-265-1088(c)(1)(i), (c)(1)(ii), or (c)(1)(iii), as applicable.

(A) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-month period. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(B) A description of the planned routine maintenance that was performed for the control device during the previous 6-month period. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of section 11-265-1088(c)(1)(i), (c)(1)(ii), or (c)(1)(iii), as applicable, due to planned routine maintenance.

(vi) An owner or operator shall record the information specified in clauses (e)(1)(vi)(A) through (e)(1)(vi)(C) for those unexpected control device system malfunctions that would require the control device not to meet the requirements of section 11-265-1088(c)(1)(i), (c)(1)(ii), or (c)(1)(iii), as applicable.

(A) The occurrence and duration of each malfunction of the control device system.

(B) The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.

(C) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

(vii) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with section 11-265-1088(c)(3)(ii).

(f) The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of section 11-265-1083(c) shall prepare and maintain the following records, as applicable:

(1) For tanks, surface impoundments, or containers exempted under the hazardous waste organic concentration conditions specified in section 11-265-1083(c)(1) or sections 11-265-1084(c)(2)(i) through (c)(2)(vi), the

owner or operator shall record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of section 11-265-1084.

- (2) For tanks, surface impoundments, or containers exempted under the provisions of section 11-265-1083(c)(2)(vii) or (c)(2)(viii), the owner or operator shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.

(g) An owner or operator designating a cover as "unsafe to inspect and monitor" pursuant to section 11-265-1085(1) or 11-265-1086(g) shall record in a log that is kept in the facility operating record the following information: The identification numbers for waste management units with covers that are designated as "unsafe to inspect and monitor," the explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover.

(h) The owner or operator of a facility that is subject to this subchapter and to the control device standards in 40 CFR part 60, subpart VV, or 40 CFR part 61, subpart V, may elect to demonstrate compliance with the applicable sections of this subchapter by documentation either pursuant to this subchapter, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V, to the extent that the documentation required by 40 CFR parts 60 or 61 duplicates the documentation required by this section.

(i) For each tank or container not using air emission controls specified in sections 11-265-1085 through 11-265-1088 in accordance with the conditions specified in section 11-265-1080(d), the owner or operator shall record and maintain the following information:

- (1) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in section 11-265-1080(d)(1).
- (2) A description of how the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) are managed at the facility in tanks and containers. This description shall include the following information:
 - (i) For the tanks used at the facility to manage this hazardous waste, sufficient information shall be provided to describe for each tank: A facility identification number for the tank; the purpose

and placement of this tank in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.

- (ii) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to describe: A facility identification number for the container or group of containers; the purpose and placement of this container, or group of containers, in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers.
- (3) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) in the tanks and containers as described in paragraph (i)(2) would create an undue safety hazard if the air emission controls, as required under sections 11-265-1085 through 11-265-1088, are installed and operated on these waste management units. This explanation shall include the following information:
 - (i) For tanks used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under this subchapter, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.
 - (ii) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers; and why installation of safety devices on the required air emission controls, as allowed under this subchapter, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent

with good engineering and safety practices for handling organic peroxides.

(j) For each hazardous waste management unit not using air emission controls specified in sections 11-265-1085 through 11-265-1088 in accordance with the provisions of section 11-265-1080(b)(7), the owner and operator shall record and maintain the following information:

- (1) Certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable Federal Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63.
- (2) Identification of the specific requirements codified under 40 CFR part 60, part 61, or part 63 with which the waste management unit is in compliance. [Eff 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1090)

§11-265-1091 (Reserved)

SUBCHAPTER DD

CONTAINMENT BUILDINGS

§11-265-1100 Applicability. The requirements of this subchapter apply to owners or operators who store or treat hazardous waste in units designed and operated under section 11-265-1101. The owner or operator is not subject to the definition of land disposal in chapter 11-260 provided that the unit:

(a) Is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the units, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls;

(b) Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel and handling equipment within the unit;

(c) If the unit is used to manage liquids, has:

- (1) A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;
- (2) A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the

- primary barrier; and
- (3) A secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest possible time, unless the unit has been granted a variance from the secondary containment system requirements under paragraph 11-265-1101(b)(4);
- (d) Has controls as needed to permit fugitive dust emissions; and
- (e) Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment. [Eff 6/18/94; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1100)

§11-265-1101 Design and operating standards. (a) All containment buildings must comply with the following design standards:

- (1) The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.
- (2) The floor and containment walls of the unit, including the secondary containment system if required under subsection (b), must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. The department will consider standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of this subsection. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be

made for light-weight doors and windows that meet these criteria:

- (i) They provide an effective barrier against fugitive dust emissions under paragraph (c)(1)(iv); and
 - (ii) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.
- (3) Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.
- (4) A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.
- (b) For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator must include:
 - (1) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g., a geomembrane covered by a concrete wear surface).
 - (2) A liquid collection and removal system to prevent the accumulation of liquid on the primary barrier of the containment building:
 - (i) The primary barrier must be sloped to drain liquids to the associated collection system; and
 - (ii) Liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time that protects human health and the environment.
 - (3) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.
 - (i) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:
 - (A) Constructed with a bottom slope of 1 percent or more; and
 - (B) Constructed of a granular drainage material with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of 12 inches

- (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of $3 \times 10^{-5} \text{m}^2/\text{sec}$ or more.
 - (ii) If treatment is to be conducted in the building, an area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.
 - (iii) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of paragraph 11-265-193(d)(1). In addition, the containment building must meet the requirements of subsections 11-265-193(b) and (c) to be considered an acceptable secondary containment system for a tank.)
- (4) For existing units other than 90-day generator units, the director may delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards of this subchapter. In making this demonstration, the owner or operator must:
 - (i) Provide written notice to the director of their request. This notification must describe the unit and its operating practices with specific reference to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment;
 - (ii) Respond to any comments from the director on these plans within 30 days; and
 - (iii) Fulfill the terms of the revised plans, if such plans are approved by the director.
- (c) Owners or operators of all containment buildings must:
 - (1) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:
 - (i) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;
 - (ii) Maintain the level of the stored/treated hazardous

- waste within the containment walls of the unit so that the height of any containment wall is not exceeded;
- (iii) Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed; and
 - (iv) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions. In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices. This state of no visible emissions must be maintained effectively at all times during normal operating conditions, including when vehicles and personnel are entering and exiting the unit.
- (2) Obtain certification by a qualified registered professional engineer that the containment building design meets the requirements of subsections (a) through (c). For units placed into operation prior to February 18, 1993, this certification must be placed in the facility's operating record (on-site files for generators who are not formally required to have operating records) no later than 60 days after the date of initial operation of the unit. After February 18, 1993, PE certification will be required prior to operation of the unit.
 - (3) Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, the owner or operator must repair the condition promptly, in accordance with the following procedures.
 - (i) Upon detection of a condition that has led to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier) the owner or operator must:
 - (A) Enter a record of the discovery in the facility operating record;
 - (B) Immediately remove the portion of the containment building affected by the condition from service;
 - (C) Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs; and

- (D) Within 7 days after the discovery of the condition, notify the director of the condition, and within 14 working days, provide a written notice to the director with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.
- (ii) The director will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.
- (iii) Upon completing all repairs and cleanup the owner or operator must notify the director in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with paragraph (c)(3)(i)(D) of this section.
- (4) Inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring equipment and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.
- (d) For containment building that contains both areas with and without secondary containment, the owner or operator must:
 - (1) Design and operate each area in accordance with the requirements enumerated in subsections (a) through (c);
 - (2) Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and
 - (3) Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.
- (e) Notwithstanding any other provision of this subchapter, the director may waive requirements for secondary containment for a permitted containment building where the owner or operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system. [Eff 6/18/94; comp
(Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35)
(Imp: 40 C.F.R. §265.1101)]

of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless subsection 11-261-3(d) applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in subchapters G and H of this chapter.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in subsection (a), the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (section 11-265-310). In addition, for the purposes of closure, post-closure, and financial responsibility, such a containment building is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in subchapters G and H of this chapter. [Eff 6/18/94; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1102)

§§11-265-1103 -- 11-265-1110 [Reserved]

SUBCHAPTER EE

HAZARDOUS WASTE MUNITIONS AND EXPLOSIVES STORAGE

§11-265-1200 Applicability. The requirements of this subchapter apply to owners or operators who store munitions and explosive hazardous wastes, except as section 11-265-1 provides otherwise. (NOTE: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (chapter 11-265, subchapter DD), tanks (chapter 11-265, subchapter J), or containers (chapter 11-265, subchapter I); See section 11-266-205 for storage of waste military munitions). [Eff 6/18/94; am 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1200)

§11-265-1201 Design and operating standards. (a) Hazardous waste munitions and explosives storage units must be designed and operated with containment systems, controls, and monitoring, that:

- (1) Minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated run-off, to the soil, ground water, surface water, and atmosphere;
 - (2) Provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste;
 - (3) For wastes stored outdoors, provide that the waste and containers will not be in standing precipitation;
 - (4) For liquid wastes, provide a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area, or vapor detection system that assures that any released liquids or vapors are promptly detected and an appropriate response taken (e.g., additional containment, such as overpacking, or removal from the waste area); and
 - (5) Provide monitoring and inspection procedures that assure the controls and containment systems are working as designed and that releases that may adversely impact human health or the environment are not escaping from the unit.
- (b) Hazardous waste munitions and explosives stored under this subchapter may be stored in one of the following:
- (1) Earth-covered magazines. Earth-covered magazines must be:
 - (i) Constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed;
 - (ii) Designed and constructed:
 - (A) To be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit;
 - (B) To provide working space for personnel and equipment in the unit; and
 - (C) To withstand movement activities that occur in the unit; and
 - (iii) Located and designed, with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.
 - (2) Above-ground magazines. Above-ground magazines must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.
 - (3) Outdoor or open storage areas. Outdoor or open storage areas must be located and designed so as to minimize

the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

(c) Hazardous waste munitions and explosives must be stored in accordance with a Standard Operating Procedure specifying procedures to ensure safety, security, and environmental protection. If these procedures serve the same purpose as the security and inspection requirements of section 11-265-14, the preparedness and prevention procedures of chapter 11-265, subchapter C, and the contingency plan and emergency procedures requirements of chapter 11-265, subchapter D, then these procedures will be used to fulfill those requirements.

(d) Hazardous waste munitions and explosives must be packaged to ensure safety in handling and storage.

(e) Hazardous waste munitions and explosives must be inventoried at least annually.

(f) Hazardous waste munitions and explosives and their storage units must be inspected and monitored as necessary to ensure explosives safety and to ensure that there is no migration of contaminants out of the unit. [Eff 3/13/99; comp

] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1201)

§11-265-1202 Closure and post-closure care. (a) At closure of a magazine or unit which stored hazardous waste under this subchapter, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste, and manage them as hazardous waste unless section 11-261-3(d) applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for magazines or units must meet all of the requirements specified in subchapters G and H, except that the owner or operator may defer closure of the unit as long as it remains in service as a munitions or explosives magazine or storage unit.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in subsection (a), the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he or she must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (section 11-264-310). [Eff 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: 40 C.F.R. §265.1202)

SUBCHAPTER FF

APPENDICES

§11-265-1300 Appendices. Appendices I, III, IV, V, and VI to 40 CFR Part 265, revised as of May 25, 1998, and Appendix VII, are made a part of this chapter. These Appendices are entitled:

Appendix I - Recordkeeping Instructions

Appendix III - EPA Interim Primary Drinking Water Standards

Appendix IV - Tests for Significance

Appendix V - Examples of Potentially Incompatible Waste

Appendix VI - Compounds with Henry's Law Constant less than 0.1
Y/X

Appendix VII - EPA Form 8700-13B

[Eff 3/13/99; comp] (Auth: HRS §§342J-4, 342J-31, 342J-34, 342J-35) (Imp: None)